INTERNATIONAL SEMINAR ON GLOBAL HEALTH
“Global Challenge Toward Communicable and non-Communicable Diseases”

CONFERENCE PROCEEDINGS
PUBLIC HEALTH I REPRODUCTIVE HEALTH I NURSING I BIOMEDICAL SCIENCES

Available Online: isgh.stikesayani.ac.id
CONFERENCE PROCEEDINGS
OCTOBER 19-20, 2017
BANDUNG-CIMAHI, INDONESIA
CONTENT ........................................................................................................................................... II
ORGANIZING COMMITTEE .................................................................................................................. XII
ACKNOWLEDGEMENTS ....................................................................................................................... XIV
GENERAL INFORMATION ...................................................................................................................... XV
CONFERENCES SCHEDULE .................................................................................................................. XVI
WELCOME SPEECH FROM THE DEAN .................................................................................................. XVII
WELCOME MESSAGE FROM THE CONFERENCE CHAIR ....................................................................... XVIII

RELATIONSHIP BETWEEN LONG TERM USE OF DEPO MEDROXY PROGESTERONE ACETATE (DPMA) WITH MENSTRUAL DISODERS IN CIPENDAWA PUSKESMAS CIANJUR 2016 …… 1
1 SOFFA ABDILLAH*, 2 BUDIMAN ........................................................................................................ 1
1 Midwifery Diploma AKBID Cianjur...................................................................................................... 1
2 Public Healty Study Programe STIKES A. Yani Cimahi ................................................................. 1

THE ANALYSIS OF DIFFERENT AVERAGE OF HEMOGLOBIN INCREASE BETWEEN ADOLESCENT GIRLS WHO REGULARLY AND IRREGULARLY CONSUME IRON TABLETS AT PATRIOT BANGSA JUNIOR HIGH SCHOOL IN JANUARY 2017 .............................................. 6
1 WISDYANA SARIDEWI*, 2 RANI SUMARNI..................................................................................... 6
1, 2 Midwifery Departement Stikes Jenderal Achmad Yani Cimahi .................................................... 6

CORTISOL EFFECT ON MATERNAL PAIN IN THE LABOR ENVIRONMENTAL SETTINGS……. 12
1 NANIK CAHYATI*, 2 FITRI NURHAYATI .............................................................................................. 12
1, 2 Department of Midwifery, School of Health Sciences Jenderal Achmad Yani, .................. 12

A SYSTEMATIC REVIEW : EFFECTIVENESS BREASTFEEDING MODE ON REDUCING MOTHER TO CHILD TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) ...................... 18
1 AMALIA ZULFAH WIJAYA*, 2 ARUMI, 3 WAHYU SULISTIADI ................................................................ 18
1, 2 Ministry of Health, Jakarta, Indonesia .................................................................................... 18

THE EFFECT OF CONSUMPTION DATES EXTRACT AGAINST THE DURATION FIRST STAGE OF ACTIVE PHASE I AMONG INTRANATAL WOMAN IN BPM NY.F ........................................... 30
1 SISWI WULANDARI1, 2 FARIDA HIDAYATI, 3 EVA DWI RAMAYANTI .................................................. 30
1, 2, 3 Faculty Of Health Sciences Universitas Kadiri ........................................................................ 30

DECISION MAKIN PATTERNS OF BADUY DALAM COMMUNITY IN REFERRING TO THE CASES OF MATERNAL AND NEONATAL EMERGENCES ......................................................... 34
1 YAYAH ROKAYAH *, 2 RERY KURNIAWATI D.I, 3 AYI TANSAH .......................................................... 34
1, 2, 3 Poltekkes Kemenkes Banten Department of Midwifery ............................................................ 34

INFLUENCES OF DATES CONSUMPTION ON HEMOGLOBIN CONCENTRATION OF PREGNANT WOMAN AT BPM SITI FATIMAH CIMAH…….. 38
1 SRI YUNIARTI*, 2 MAULUDWINA BETHASARI .................................................................................. 38
1 Department of Midwifery, School of Health Sciences Jenderal Achmad Yani ......................... 38
2 Institute of Technology Bandung , Bandung, Indonesia ............................................................. 38
THE EFFECT OF PERINEUM LACERATIONS AND CLINICAL DATA TOWARDS THE FUNCTIONS OF SEXUAL POST PARTUM MOTHER IN CIMIHA CITY ................................................................. 43
1Dini Marlina*, 2Sophia ................................................................. 43

TODDLER NUTRITIONAL STATUS WITH CHILD HEALTH SERVICE IN WORKING AREA OF PUSKESMAS CIPADUNG 2015 ................................................................. 49
1Siti Nur Endah*, 2Siti Rokhiyatun ................................................................. 49
Lina Haryani1, Dwi Prasetyo2, Yoni Fuadah Syukriani3, Hadyana Sukandari3, Tono Diuwanto*5, Farid Husin6 ................................................................. 56

HUSBAND’S SUPPORT TOWARD ANXIETY DEALING WITH LABOR AND OUTCOMES OF MATERNAL BIRTH IN PRIMIGRAVIDA .............................. 63

(A PROSPECTIVE COHORT STUDY IN BANDUNG AREA) ................................................................. 63
1R Noucie Septrilyana1, Yeni Rosyeni ................................................................. 63
1,2Stikes Jenderal Achmad Yani Cimahi ................................................................. 63

THE PATTERN OF FAMILY SUPPORT TOWARD ELDERLY AT HAMLET II OF KADIPIRO URBAN VILLAGE OF BANJARSAI SUBDISTRICT ................................................................. 68

OF SURAKARTA CITY ................................................................. 68
1Mujahidatul Musfiroh*, 2Ika Sumiyarsi Sukamto ................................................................. 68
1,2Department of Midwifery, Faculty of Medicine, UNS ................................................................. 68

THE ROLE OF MOTHER CARES APPLICATIONS (MOCA) TOWARDS KNOWLEDGE AND PARENTING SKILLS IN STIMULATING GROWTH ................................................................. 73
1Mega Dewi Lestari*, 2Dede Wusli ................................................................. 73
1,2Department of Midwifery, School of Health Sciences Jenderal Achmad Yani ................................................................. 73

CARES (MOCA) APPLICATION TOWARD KNOWLEDGE AND PARENT’S SKILLS IN STIMULATION IMPLEMENTING OF INFANT’S GROWTH AND DEVELOPMENT AGE 6-12
MONTH ................................................................. 79
Yuliana ................................................................. 79
Budi Luhur Cimahi Institute of Health Sciences ................................................................. 79

THE EFFECT OF DELAYED UMBILICAL CORD CLAMPING ON THE HEMOGLOBIN LEVEL OF NEWBORN ................................................................. 84
1Sri Sumarni*, 2Intan Laily Rahmawati, 3Ngadyono ................................................................. 84
1,2,3Poltekkes Kemenkes Semarang ................................................................. 84

EFFECT OF REINFORCING FACTOR TO PERSPECTIVE OF THE NURSING MOTHERS AGAINST BREASTFEEDING EXCLUSIVE IN GENUK’S PRIMARY HEALTH CARE ................................................................. 91
1Elisa Ulfiana*, 2Endri Astuti ................................................................. 91
Program Studi DIV Kebidanan Semarang Jurusan Kebidanan Semarang ................................................................. 91

THE EFFECT OF LAVENDER AROMATHERAPY TO PERINEUM WOUND ................................................................. 103

PAIN POST PARTUM ................................................................. 103
1Umrah*, W.Turidawati, 2Melyana Nurul Widyawati ................................................................. 103
1,2Poltekkes Kemenkes Semarang ................................................................. 103
2Midwife at Puskesmas Kajen Pekalongan ................................................................. 103

THE DIFFERENCE OF INFLUENCE OF COOPERATIVE LEARNING JINGSA AGAINST NHT (NUMBERES HEAD TOGETHER) WITH STUDENT LEARNING OUTCOME AT D3 MIDWIFERY STUDY PROGRAM FACULTY OF HEALTH SCIENCES KADIRI UNIVERSITY ................................................................. 113
Narmatul Retno Faizah ................................................................. 113
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE INFLUENCE OF ZILGREI METHOD ON ANXIETY OF PRIMIGRAVIDA MOTHER IN SECOND STAGE LABOR</td>
<td>119</td>
</tr>
<tr>
<td>Ati Nurwita</td>
<td>119</td>
</tr>
<tr>
<td>Midwifery Study Program, Stikes Jenderal A. Yani Cimahi</td>
<td>119</td>
</tr>
<tr>
<td>MATERNAL HEALTH LITERACY TOWARDS THE READINESS OF EXCLUSIVE BREASTFEEDING</td>
<td>123</td>
</tr>
<tr>
<td>Sri Mulyani</td>
<td>123</td>
</tr>
<tr>
<td>D4 Midwife Lecturer Medical Faculty UNS</td>
<td>123</td>
</tr>
<tr>
<td>THE GLOBAL CHALLENGE IN REPRODUCTIVE HEALTH ISSUES; LESSON LEARNT FOR A DEVELOPED COUNTRY: JAPAN</td>
<td>128</td>
</tr>
<tr>
<td>Hiromi Eto</td>
<td>128</td>
</tr>
<tr>
<td>Nagasaki University, Japan</td>
<td>128</td>
</tr>
<tr>
<td>THE ROLE OF DEMOGRAPHIC FACTORS AND SOCIAL CHARACTERISTICS TOWARD THE WILLINGNESS TO UNDERGO HIV TESTING AMONG REPRODUCTIVE AGE WOMEN IN BANDUNG CITY</td>
<td>129</td>
</tr>
<tr>
<td>1Flora Honey Darmawan*, 2Hadayana, 3Farid Husin</td>
<td>129</td>
</tr>
<tr>
<td>1Stikes Jenderal Achmad Yani,</td>
<td>129</td>
</tr>
<tr>
<td>2Pasca Sarjana Unpad,</td>
<td>129</td>
</tr>
<tr>
<td>3Magister Kebidanan Unpad</td>
<td>129</td>
</tr>
<tr>
<td>THE INFLUENCE OF ENDORPHIN MASSAGE TOWARDS THE LABORAING IMPROVEMENT ON PRIMIPAROUS MOTHER AT MS. ANNA PRIVATE MIDWIFE PRACTICE IN BANDUNG REGENCY</td>
<td>136</td>
</tr>
<tr>
<td>1Indria Astuti*, 2Rd Nocio Septryliana</td>
<td>136</td>
</tr>
<tr>
<td>1Stikes Jenderal Achmad Yani,</td>
<td>136</td>
</tr>
<tr>
<td>THE EFFECT OF REMINISCENCE THERAPY ON DIABETES MELLITUS PATIENTS WITH DEPRESSION AT THE PERSADIA CLINIC DUSTIRA HOSPITAL CIMahi</td>
<td>143</td>
</tr>
<tr>
<td>1Argi Virgona Bangun*, 2Nadirawati</td>
<td>143</td>
</tr>
<tr>
<td>1,2Nursing Science Dept. School of Health Sciences Jenderal Achmad Yani</td>
<td>143</td>
</tr>
<tr>
<td>RELATIONSHIP OF EATING HABITS WITH OCCURRENCE OF EATING DISORDERS IN PRE-SCHOOL CHILDREN IN ISLAMIC EDUCATION FOUNDATION RIYADOL MAHIRIN CIMahi</td>
<td>149</td>
</tr>
<tr>
<td>Setiawati</td>
<td>149</td>
</tr>
<tr>
<td>Nursing Department Stikes Jenderal Achmad Yani Cimahi</td>
<td>149</td>
</tr>
<tr>
<td>THE RELATIONSHIP BETWEEN HYPERTENSIVE MEDICATION ADHERENCE AND STROKE RECCURRENCE AT NEUROLOGY POLYCLINIC IN TNI AU DR. M. SALAMUN HOSPITAL TK II BANDUNG</td>
<td>152</td>
</tr>
<tr>
<td>Hikmat Rudyana</td>
<td>152</td>
</tr>
<tr>
<td>Nursing Science Departement. School of Health Sciences Jenderal Achmad Yani</td>
<td>152</td>
</tr>
<tr>
<td>HYMPNOPARENTING EFFECTS TOWARDS FATIGUE PREVALENCE AS AN IMPACT OF CHEMOTHERAPY AMONG PEDIATRIC PATIENTS WITH ACUTE LYMPHOBLASTIC LEUKEMIA</td>
<td>159</td>
</tr>
<tr>
<td>Sapariah Anggraini</td>
<td>159</td>
</tr>
<tr>
<td>Suaka Insan School of Health Sciences</td>
<td>159</td>
</tr>
<tr>
<td>MOTHER HOME CARE PATTERNS FOR THE CARE OF THEIR CHILDREN WITH AUTISM: GROUNDED THEORY STUDY</td>
<td>165</td>
</tr>
<tr>
<td>1Dania Relina *, 2Blancus Dedi, 3Oop Rope'1</td>
<td>165</td>
</tr>
</tbody>
</table>
RELATIONSHIP OF PHYSICAL ACTIVITY AND POLYMORPHISM ANGIOTENSIN CONVERTING ENZYME INSERTION / DELETION WITH HYPERTENSION OCCURRENCE IN COASTAL COMMUNITIES ................................................................. 176
1 SRI SUSANTY *, 2 PUTU SUDAYASA, 3 JULITA STELLA ................................................................. 176
1,2,3 Dept Of Nursing Faculty of Medicine Univ. of Halu Oleo, Southeast Sulawesi ...... 176

THE EFFECTS OF BREASTFEEDING COUNSELING TO CULTURAL VIEW AND BELIEF OF EXCLUSIVE BREASTFEEDING IN PERINATOLOGY ROOM RSUD CIBABAT CIMahi ...... 181
1 CHATARINA SURYANINGSIH *, 2 HEMI FITRIANI ................................................................. 181
1,2 Program Study of Nursing Science Stikes A. Yani Cimahi .................................................. 181

DOMINANT FACTORS AFFECTING THE IMPLEMENTATION OF THE INTEGRATED MANAGING TODDLER SICK (MTBS) IN PUBLIC HEALTH CENTER TASIKMALAYA WEST JAVA .......................................................................................................................... 187
1 ASEP SETIAWAN *, 2 BUDIMAN, 3 CHATARINA ................................................................. 187
1 Program Master of Nursing Stikes A. Yani Cimahi ............................................................. 187
2 Program Study Public Health Stikes A. Yani Cimahi .......................................................... 187
3 Program Study of Nursing Science Stikes A. Yani Cimahi .................................................. 187

THE INFLUENCE OF LOTTO’S COLOR ON COGNITIVE DEVELOPMENT PRESCHOOL AGE CHILDREN (4-5 YEARS OLD) IN PURNAMA KARANG MEKAR KINDERGARTEN CIMahi
TENGAH .......................................................................................................................... 194
1 FAUZIAH RUDHIATI *, 2 RINA TRIANA, 3 IBRAHIM NOCH BOLLA ........................................ 194
1,2,3 Stikes Jenderal Achmad Yani Cimahi .............................................................................. 194

THE CORRELATION OF STRESS LEVEL WITH HYPERTENSION PREVALENCE ON HYPERTENSION CLIENTS AT LEUWIGAJAH SOUTH CIMahi COMMUNITY HEALTH CENTER IN 2014 ........................................................................................................................................ 198
1 TRIA FIRZA KUMALA *, 2 KIKI BUGORI .............................................................................. 198
1,2 Nursing Departement Stikes Jenderal Achmad Yani Cimahi .............................................. 198

RELATIONSHIP OF MOTHER KNOWLEDGE WITH COMPLIANCE OF BCG IMMUNIZATION ON CHILDREN WITH TUBERCULOSIS IN PUSKESMAS PAGADEN SUBANG IN 2017 .... 205
1 LINA SAFARINA *, 2 SITI DEWI RAHMAYANTI, 3 ZUSTINA TESA ...................................... 205
1,2,3 Ners Departement Stikes Jenderal Achmad Yani Cimahi ................................................ 205
2 Nursing Master Program Departement Stikes Jenderal Achmad Yani Cimah ................ 205
3 Nursing Departement Stikes Jenderal Achmad Yani Cimahi ................................................ 205

EFFECTS OF MEDITATION ON BLOOD PRESSURE IN ELDERLY HYPERTENSION AT PANTI WERDA KARITAS CIMahi WEST JAVA INDONESIA ........................................................................ 210
1 MURTININGSIH *, 2 RAFI AHMAD FAUZI, 3 KIKI GUSTRIYANTI ......................................... 210
1,2,3 Stikes Jenderal Achmad Yani Cimahi .............................................................................. 210

THE INFLUENCE OF LOGO THERAPY ON THE MEANING LIFE OF ELDERLY WITH STROKE IN PADALARANG DISTRICT IN 2017 ........................................................................... 217
OOP ROPEI .......................................................................................................................... 217

NURSERY MODEL IMPLEMENTATION BASED ON CULTURE IN THE EFFORT OF HANDLING HYPERTENSION DISEASE IN SUKABUMI REGENCY ................................................................ 221
1 HENDRI HADITYANTO *, 2 TUAI NUR ................................................................................. 221
EFFECTIVENESS OF DEVELOPMENT OF BABY SWIM IN CIPAGERAN PUBLIC HEALTH CARE AREA CIPAGERAN CIMAH ............................ 224
1,2 Nursery Departement Stikes Jenderal Achmad Yani Cimahi ............................................ 224

THE INFLUENCES OF AUDITORY-VISUAL STIMULATION TOWARD THE LOW BIRTH WEIGHT INFANT GROWTH ......................... 232
1,2 Nursing Departement Stikes Jenderal Achmad Yani Cimahi ............................................ 232

SOCIAL PREDISPOSING FACTOR OF SCHIZOPHRENIA .......................................................... 238

THE EFFECT INAYAH OUTPATIENT NURSING CARE (IONC) MODEL ........................................ 244

IN OUTPATIENT GENERAL HOSPITAL ....................................................................................... 244

REMINISCENCE THERAPY FOR THE ELDERLY WITH LONELINESS IN SOCIAL INSTITUTION OF TRESNA WERDHA BANJARBARU SOUTH KALIMANTAN.......................................................... 199

THE EFFECT OF COOPERATIVE PLAY TO EMOTIONAL INTELLIGENCE OF PRE SCHOOL CHILDREN IN RAMAH BINTANG ISLAMIC ............................................................................................................. 206

THE INFLUENCE OF GROUP GUIDANCE USING HOME ROOM TECHNIQUE ON ANXIETY LEVEL OF YOUNG WOMEN WHO CONFRONTED BY MENACRHE GRADE IV, V, IN AISYIAH ISLAMIC CENTER ELEMENTARY SCHOOL CIANJUR ............................................................. 212

THE EFFECT OF PASSIVE LEG RAISING TOWARDS HEMODYNAMICS ON ................................ 219

PATIENT WITH HYPOVOLEMIC SHOCK AT THE EMERGENCY WARD OF ................................ 219

FACTORS CONTRIBUTING TO WORKPLACE’S SUPPORT TO BREASTFEEDING EMPLOYEES ................. 223
EFFECT OF COMMUNITY-BASED EDUCATION TO FOOT CARE BEHAVIOR AMONG TYPE 2 DIABETES MELLITUS PATIENTS IN BANDUNG, WEST JAVA PROVINCE, INDONESIA................................................................................................................. 230

CITRA WINDANI MAMBANG SARI*, 2 AHMAD YAMIN.......................................................................................... 230
Faculty of Nursing, Universitas Padjadjaran, Indonesia...................................................................................... 230

IS SOCIAL SUPPORT A KEY FACTOR INFLUENCING DEPRESSIVE SYMPTOMS AMONG OLDER ADULTS LIVING IN CIMahi, WEST JAVA PROVINCE, INDONESIA?.................................................................................................................. 238

SUNANTA THONGPAT, 2 Kiki Gustryanti*, 3 Sonthaya Maneerat ........................................................................... 238
1 Boromarajonani College of Nursing, Nopparat Vajira affiliated Kasetsart University, Thailand.................. 238
2 Stikes Jenderal A. Yani Cimahi, Indonesia......................................................................................................... 238

DESCRIPTION OF PATIENT’S PAIN LEVEL POST CATHETER INSTALLATION AT LOCAL GENERAL HOSPITAL................................................................................................................................. 247

MOCHAMAD Budi Santoso*, 2 Evangeline Hutabarat ...................................................................................... 247
Nursing Department Stikes Jenderal Achmad Yani Cimahi................................................................................ 247

MUSIC INTERVENTIONS IN PATIENTS DURING CORONARY ANGIOGRAPHIC PROCEDURES AT HARAPAN KITA HOSPITAL JAKARTA .................................................................................................................. 248

SUSILAWATI ......................................................................................................................................................... 248
Nursing Profession Study Program, School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia........ 248

GLOBAL HEALTH ISSUES FROM NURSING PERSPECTIVES................................................................................. 249

MARIA LINDA G. Buhat ........................................................................................................................................ 249
University of Perpetual Help System DALTA, Philippine................................................................................. 249

THE OPTIMIZATION OF PHYSICAL FITNESS THROUGH MAHATMA BREATHING AND KARATE............................................................................................................................... 252

Yusuf Nursyamsi*, 2 Muchamad Ishak .................................................................................................................. 252
1 Physical Education Lecturer of STKIP Pasundan Cimahi, Indonesia .............................................................. 252
2 STKIP Pasundan Cimahi .................................................................................................................................. 252

ATTITUDE EFFECT TO THE CLEAN AND HEALTHY BEHAVIOUR CHILDREN IN RAWA BUAYA 08 ELEMENTARY SCHOOL.................................................................................................................... 259

Gisely Vionalita1 and Devi Angeliana Kusumaningtiar2 .................................................................................... 259
1,2 Department of Public Health, Faculty of Health Sciences, University of Esa Unggul259

ANTIFUNGAL ACTIVITY OF PHYLOSHERE ACTINOBACTERIA AGAINST........................................................................ 264

PYRICULARIA ORYZAE........................................................................................................................................ 264

Noor Andryan Ilsan ........................................................................................................................................... 264

LITERACY EDUCATION ON HEALTH IN BUILDING ENVIRONMENT HEALTH BEHAVIOUR: QUALITATIVE STUDY ON COMMUNITY OF DESA PAKU HAJI, KECAMATAN NGAMPRAH, BANDUNG REGENCY......................................................................................... 271

Neneng Komariah*, 2 Saleharodiah, 3 Agus Rusmana ...................................................................................... 271
1 Study Program of Library Science, Universitas Padjadjaran ........................................................................... 271

BACTERIAL PATHOGENS IN URINARY TRACT INFECTION AND ANTIBIOTIC SUSCEPTIBILITY PATTERN AT A PRIVATE HOSPITAL IN JAKARTA, INDONESIA.................................................................................................... 278

Noor Andryan Ilsan*, 2 Malu Ingririani, 3 Nurhikmah ...................................................................................... 278
1 Dept. of Medical Laboratory Technology Stikes Mitra Keluarga Bekasi .................................................. 278

CORRELATION BETWEEN LIGHT ACUTE RESPIRATORY INFECTION SYMPTOM AND LONG EXPOSURE OF DUST FROM PT. GAMATARA TRANS OCEAN WORKER IN CIREBON 2017 285
LARVACIDAL EFFECT OF PAPAYA LEAF EXTRACTS (CARICA PAPAYA L.) TOWARD THE LARVAE OF ANOPHELES ACONITUS DONTS MOSQUITOES AS AN EFFORT TO PREVENT MALARIAN DISEASE IN RURAL AREAS OF SOUTHERN KONAWE ................................................................. 290
1 NANI YUNIAR*, 2RUSLAM MAJID, LA ODE, 3MUHAMAD ZETY, 4ENIS WILDAN .................................................. 290
1,2,3,4Faculty Of Public Health, Halu Oleo Universit, Green Campus, HEA Mokodompit Street, Kendari, Southeast Sulawesi, Indonesia ................................................................. 290

FACTORS RELATED TO MICROBIOLOGY AIR QUALITY IN AROUND THE LANDFILL PYUNGAN SITUMULYO REGENCY OF BANTUL DIY PROVINCE ................................................................. 301
1 NAYLA K FITRI*, 2ISRA ELAMAT ................................................................. 301
1Department of Public Health, Faculty of Health sciences, University of Esa Unggul ................................................................. 301
2Department of Enviromental Health, Faculty of Medicine, University of Gadjah Mada ................................................................. 301

THE RELATIONSHIP BETWEEN BODY MASS INDEX (BMI) AND WAIST CIRCUMFERENCE (WC) TO FASTING BLOOD GLUCOSE LEVEL ................................................................. 306

BASED ON MEDICAL CHECK UP RESULT OF PT. X REGIONAL JAKARTA EMPLOYEES YEAR 2016 ................................................................. 306
1 SUSLOWATI, 2BUDIMAN, 3ARI NURHAYATI SYABANIARTI.............................. 306
1,2,3Public Health Study Programme,................................................................. 306
1School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia ................................................................. 306

IDENTIFICATION OF KATG GENE FROM MYCOBACTERIUM GROWTH INDICATOR TUBE (MGIT) CULTURE ................................................................. 313
1SITTI ROMLAH*, 2PRIMA NANDA FAUZIAH, 3RINA HERYAWAN, ARIF KOHZINUL ASROI4 ................................................................. 313
1,2,4Department of Medical Laboratory Technology, STIKES Jend. Achmad Yani …. 313
1Clinical Pathology Department, Rotinsulu Hospital, Cimahi-Indonesia ................................................................. 313

DESCRIPTION OF SERUM URIC ACID LEVELS IN MID ELDERLY PATIENTS DIAGNOSED DIABETES MELLITUS ................................................................. 318
1ELLISIE VIENDRA PERMANA*, 2SUSYRAWATI KASIMAN, 3M.NOVI DWI KRISTI ASTUTI .... 318
1,3Department of Medical Laboratory Technology, STIKES Jend. Achmad Yani …. 318
2Clinical Pathology Department, Cibabat Hospital, Cimahi-Indonesia ................................................................. 318

RELATIONSHIP BETWEEN AIP WITH HS-CRP AND ADMA ON TYPE 2 ................................................................. 323

DIABETES MELLITUS ................................................................. 323
1ELLIS SUSANTI*, 2MARSETIO DONOSESPOETRO, 3ILHAMJAIB PATELLONGI, ................................................................. 323
4MANSYUR ARIEF ........................................................................... 323
1Health Analyst Program of Study, Faculty of Health MH Thamrin University, ................................................................. 323
2Faculty of Medicine, Airlangga University, Surabaya ................................................................. 323
3Faculty of Medicine, Hasanuddin University, Makassar ................................................................. 323

OPTIMIZATION OF ANTIBODY ISOLATION COLLECTED FROM HYPERIMUNIZED RABBIT USING AMMONIUM SULPHATE WITH AND WITHOUT CENTRIFUGATION ................................................................. 328
1DIKI HILMI*, 2ELLISIE VIENDRA PERMANA, 3SITTI ROMLAH, 4WIKAN MAHARGYANI, 5SUGITO, 6BAYU PANDI SENGARA ...................................................................................... 328
1,2,4,5,6 Medical Laboratory Technology Dept Stikes Jenderal Achmad Yani ................................................................. 328

POPULATION AGEING AND THE NEED OF LONG TERM CARE ................................................................. 333
FOR OLDER PERSONS IN INDONESIA ................................................................. 333
  1TRI BUDI W. RAHARDJO, 2DINI AGUSTIN, 3TRI SURATMI, 4DIAN ELISABETH GNUITNO, 5SUSIANA NUGRAHA ......................................................... 333
  1,2,3Centre for Ageing Studies Universitas Indonesia, ................................... 333
  4Universitas Respati Indonesia, ................................................................. 333
  5Ahmad Yani School of Health Sciences ..................................................... 333

THE GLOBAL CHALLENGE IN REPRODUCTIVE HEALTH ISSUES; LESSON LearNT FOR A DEVELOPED COUNTRY: JAPAN .......................................................... 334
  HIROMI ÉTO ........................................................................................................ 334
  Nagasaki University, Japan ................................................................. 334

CARCINOGEN SUBSTANCES IN BREWING INSTANT COFFEE SOLD IN BANDUNG MINIMARKET ........................................................................................................ 335
  1PERDINA NURSIDIKA*, 2SITTI ROMLAH .................................................. 335
  1,2Stikes Jenderal Ahmad Yani Cimahi ......................................................... 335

FACTOR RELATED TO HEALTH AND OCCUPATIONAL SAFETY STATUS OF FARMERS IN KELANTAN, MALAYSIA ............................................................................. 336
  ROHI A. GHAZALI .............................................................................................. 336
  Universiti Kebangsaan Malaysia .................................................................... 336

AN OVERVIEW OF HIV, HBV, AND HCV INFECTIONS .................................. 337

AMONG TATTOOED PEOPLE IN CIMahi .......................................................... 337
  PATRICIA GITA NAULLY*, DIKI HILMI, MIHTAH MUHAMAD HOMIS, OKTAVIANI INDAH PERMATA, RINZANI NURLAILI SOVIAYANI ......................................................... 337
  Department of Medical Laboratory Technology, Stikes Jenderal A. Yani Cimahi .......... 337

THE STUDY OF E-CATALOGUE SYSTEM ON THE PERFORMANCE OF MEDICAL EQUIPMENTS PROCUREMENT AT WEST BANDUNG DISTRICT (KBb) HEALTH SERVICES 2017 .................................................................................................................. 343
  1AYU LAULI RAHMIIYATI, 2GUNAWAN IRIANTO ......................................... 343
  1,2Public Health Science Dept, Stikes Jenderal Ahmad Yani Cimahi .................... 343

A PRELIMINARY STUDY OF BACTERICINS EFFECTS FROM LACTOBACILLUS BULGARICUS ON TUMOR NECROSIS FACTOR- A (TNF-A) IN PREECLAMPSIA TROPHOBLAST CELL ................................................................. 350
  1PRIMA NANDA FAUZIAH*, 2SITTI ROMLAH*, 3SANDRA AYU PUTRI TURVANDI ................................................................. 350
  1,2,3Department of Medical Laboratory Technology Stikes Jenderal A. Yani .......... 350

FACTORIAL ANALYSIS OF THE RISK RELATED TO BYSSINOSIS AMONG TEXTIL WORKERS IN CIMAhI ......................................................................................... 355
  1LELA JUARIAH*, 2JUJU JUAHAERIAH, NOVIE E MAULIku ................................................. 355
  1,2,3Stikes Jenderal Ahmad Yani Cimahi ......................................................... 355

THE COUNSELING OF MARITAL AGE MATURITY EFFECT TOWARD GIRLS’ATTITUDE ON EARLY MARRIAGE ................................................................. 362
  1SOPHIA*, 2SRI YUNIARTI, 3EKA PUTRI .......................................................... 362
  1,2,3Department of Midwifery, School of Health Sciences Jenderal Achmad .......... 362

KNOWLEDGE, ATTITUDE, AND PRACTICES STUDENTS ON SEXUAL AND REPRODUCTIVE HEALTH IN SELECTED GOVERNMENT SENIOR HIGH SCHOOLS IN CIMAhI ......................................................... 368
  YAYAT SURYAT .................................................................................................. 368
  Stikes Jenderal Ahmad Yani Cimahi ................................................................. 368
STUDY CASE: NURSING SERVICES PROGRAM IN INCREASING COMPLIANCE TO TREATMENT OF CHILDREN THAT SUFFERING TBC IN UPTD CILILIN

1Asep, 2Ina Inayah, 3Dwi Hastuti

1 Cililin Public Health Centre

2, 3 School of Health Sciences Jenderal Achmad Yani Cimahi
Organizing Committee

Gunawan Irianto, dr., M.Kes
Brigjen Bambang Wiryadi
Dr. Budiman, M.Kes., MH.Kes
Dr. Arina Novilla, S.Pd., M.Si
R. Setijo Widodo, dr., Sp.KFR
Susiana Nugraha, SKM., MN (M.Sc)
Sri Yuniarti, S.Psi., MKM
Perdina Nursidika, M.Si
Tri Setiowati, SST., SKM., M.Kes
Dyna Apriany, S.Kp.,M.Kep
Patricia Gita Naullly, S.Si.,M.Si
Erick Khrisitan, M.Si
Prima Nanda Fauziah, M.Si
Melyana Rusidawati, SS.,MM
Dr. Dyan Kunthi Nugrahaeni, SKM.,MKM
Novi E. Mauliku, SKM.,M.Sc
Lina Safarina, S.Kp.,M.Kep
M. Budi Santoso, S.Kep.,Ners.,M.Kep
R. Nourcie Sepriliyana, SST.,M.Keb
Siti Nur Endah, SKM.,M.Kes
Wikan Mahargyani, S.Si.,MSc
Kiki Gustranyti, S.Kp.,MN
Esfandiari Dwi Nanda Rosaldi
Johnes Robinhut, SS
Asep Badrujamaludin, BN.,RN.,MN
Teguh Akbar Budiana, SKM.,M.Gizi
Ismafiaty, S.Kp.,M.Kep
Indria Astuti, SST.,M.Keb
Lela Juariah, S.Kp.,MH.Kes
Asep Dian Abdillah, SKM.,MM.,MH.Kes
Dini Marlina, SST.,SKM.,M.Kes
Iis Herawati, S.Pd.,M.Kes
Yuningsih, S.Pd
Tetty Sukmayati, S.Pd.,MM
Ida Nurhayati, S.Pd
R. Edhi Pratjojo
Yudi Sudardi
Saepudin, ST
Bagus Wisuda Prasetyo, SH.,MH
Suharto
Agus Suryaman
## Reviewers

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Hiromi Eto, Ph.D</td>
<td>Nagasaki University</td>
</tr>
<tr>
<td>Prof. Yuko Hirano, Ph.D</td>
<td>Nagasaki University</td>
</tr>
<tr>
<td>Prof. Dr. Tribudi W. Rahardjo</td>
<td>Nagasaki University</td>
</tr>
<tr>
<td>Debbie S. Retnoningrum, M.Sc., Ph.D</td>
<td>Bandung Institute of Technology</td>
</tr>
<tr>
<td>Dr. Berry Juliandi</td>
<td>Bogor Agricultural University</td>
</tr>
<tr>
<td>Dra. Laili Rahayuwati, M.Kes, Dr.Ph</td>
<td>Padjajaran University</td>
</tr>
<tr>
<td>Dr. Dyan Kunthi Nugrahaeni, SKM., M.Kes</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Dr. Dyan Kunthi Nugrahaeni, SKM., MKM</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Novi E. Mauliku, SKM., M.Sc</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Lina Safarina, S.Kp., M.Kep</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>M. Budi Santoso, S.Kep., Sers., M.Kep</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>R. Noucie Septriliyana, SST., M.Keb</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Siti Nur Endah, SKM., M.Kes</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Wikan Mahargyani, S.Si., MSc</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Patricia Gita Naully, M.Si</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Perdina Nursidika, M.Si</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
<tr>
<td>Susiana Nugraha, SKM.MN (M.Sc)</td>
<td>Stikes Jenderal Achmad Yani Cimahi</td>
</tr>
</tbody>
</table>
Acknowledgements

The Organizing Committee would like to extend its great gratitude to the following sponsors and organizations that generously contribute and support to the success of International Seminar on Global Health Stikes Jenderal Achmad Yani Cimahi.
General Information

Venue:
Day 1
Grand Aquila Hotel Bandung
Jl. Dr. Djundjunan No.116 Bandung 40173, Indonesia
Phone: (+62-22) 2039280
Fax: (+62-22) 2039282

Day 2
Stikes Jenderal Achmad Yani
Jl. Terusan Jenderal Sudirman Cimahi 403533
Phone: (+62-22) 6631622
Fax: (+62-22) 6631624

Poster Area:
Hotspot Area Stikes Jenderal Achmad Yani

Oral Instructions
- Total length of each session is 450 minutes. The specific length of each presentation depends on the number of presentations in that session or about 20 minute each presentation.
- All presentation rooms are equipped with a screen, an LCD projector, and a laptop computer installed with PowerPoint software.
A day before please email your slide through isgh.stikesayani@gmail.com

Poster Instructions
- Materials Provided by the Conference Organizer:
  1. Poster display
  2. Adhesive Tapes or Clamps
- Materials Prepared by the Presenters:
  1. Home-made Poster(s)
- Requirement for the Posters:
  1. Material: not limited, can be posted on the canvases
  2. Size: A0/A1

A Polite Request to All Participants
Participants are requested to arrive in a timely fashion for all addresses, whether to their own, or to those of other presenters. Presenters are reminded that the time slots should be divided fairly and equally between the number of presentations, and that they should not overrun. The session chair is asked to assume this timekeeping role.

Participated Countries
Indonesia, Japan, Malaysia, Philippine, Thailand, Australia

Journals
Some selected papers are continued to be reviewed by accredited and indexed Journal’s reviewers.
## Conferences Schedule

<table>
<thead>
<tr>
<th>No</th>
<th>Waktu</th>
<th>Kegiatan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>07:00 – 08:00</td>
<td>Preparation and registration</td>
</tr>
<tr>
<td>1</td>
<td>08:00 – 09:45</td>
<td>Opening ceremony &lt;br&gt; Welcoming dance &lt;br&gt; Committee report speech &lt;br&gt; Welcoming speech &lt;br&gt; Opening Speech by ministry of health &lt;br&gt; Photo session</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coffee break</td>
</tr>
<tr>
<td>2</td>
<td>10:00 – 12:00</td>
<td>Keynote speaker by &lt;br&gt; 1. WHO Indonesia &lt;br&gt; “Current Global health issues in communicable diseases” &lt;br&gt; 2. Prof. Tribudi W Rahardjo (Center for Aging Studies) &lt;br&gt; “Current Global health issues in aging and non-communicable diseases” &lt;br&gt; Moderator: IAKMI: Ahyani reksa negara</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lunch Break and afternoon prayer</td>
</tr>
<tr>
<td>3</td>
<td>13:00 – 16:30</td>
<td>Panel discussion &lt;br&gt; Public health by: Prof. Yuko Hirano (Nagasaki University, Japan) &lt;br&gt; Special Issues in degenerative diseases and aging, a lesson learnt from developed country: Japan &lt;br&gt; Midwifery issues: Prof. Hiromi Eto (Nagasaki University, Japan) &lt;br&gt; The global challenge in reproductive health issues; lesson learnt for developed country: Japan &lt;br&gt; Nursing issues: Prof. Dr. Maria Linda Buhat (Trinity University, Philippine) &lt;br&gt; Facing the global health issues from nursing perspectives &lt;br&gt; Biomedical issues: Prof. Madya Dr. Ghazali, (Universitas Kebangsaan Malaysia) &lt;br&gt; Biomedical perspectives toward global health issues &lt;br&gt; Moderator: dr. Bagus Rachmad Prabowo</td>
</tr>
<tr>
<td></td>
<td>16:30 – finish</td>
<td>Closing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Finished day one, welcoming party + dinner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day II will be held at the campus of STIKES JENDERAL A YANI</td>
</tr>
<tr>
<td>6</td>
<td>08:00 – 12:00</td>
<td>Symposium session (oral and poster presentation) Public health</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Symposium session (oral and poster presentation) Midwifery</td>
</tr>
<tr>
<td>8</td>
<td>12:00 – 13:00</td>
<td>Break for lunch and prayer</td>
</tr>
<tr>
<td>9</td>
<td>13:00 – 15:00</td>
<td>Symposium session (oral and poster presentation) 3</td>
</tr>
<tr>
<td>10</td>
<td>15:00 ~</td>
<td>Closing</td>
</tr>
</tbody>
</table>

City Tour
In the Name of Allah, the Most Beneficent, the Most Merciful.
It is with great pleasure that I welcome the participants of the International Seminar of Global Health, 2017. I would also like to thank participants, especially those of you coming from abroad, for joining us and sharing your valuable experience and ideas. It is essential to bring together experts in the field of health so that we can realize together the potential of information and technology in the field of health. The quest for knowledge has been from the beginning of time but knowledge only becomes valuable when it is disseminated and applied to benefit humankind. It is hoped that ISGH 2017 will be a platform to gather and disseminate the latest knowledge in global health. Academicians, Scientists, Researchers and health practitioners in the field of nursing, reproductive health and midwifery, biomedical sciences and public health will be able to share and discuss new findings and science applications in context of global health. It is envisaged that the intellectual discourse will result in future collaborations between universities, research institutions and industry both locally and internationally. In particular it is expected that focus will be given to issues on global challenge toward communicable and non-communicable diseases.
Finally I would like to congratulate the organizing committee for their tremendous efforts in organizing this International Seminar. I hope that all of you will enjoy the Conference, and I wish our visitors from abroad will have a very pleasant stay in our city.

Gunawan Irianto, dr., MKes
Dean,
Jenderal Achmad Yani, School of Health Sciences
Stikes Jenderal A Yani Cimahi
Welcome Message from the Conference Chair

On behalf of the ISGH 2017 organizing committee, I am honored and delighted to welcome you to the International Seminar on Global Health. I believe we have chosen a venue that guarantees a successful technical conference amid the culture and scenery of Bandung city. Our technical program is rich and varied with 6 keynote speeches and around 85 technical papers split between 5 parallel oral sessions and 1 poster session. This international seminar is expected to capture the current global health issues from the Public health perspectives, nursing, Midwifery, and from the perspective of biomedical sciences. This international seminar will provide the perfect forum for both faculty and participants to interact and possibly discuss future collaborations.

As a conference chair of ISGH 2017, I know that the success of the conference depends ultimately on the many people who have worked with us in planning and organizing both the technical program and supporting social arrangements. In particular, we thank the Program Chairs for their wise advice and brilliant suggestion on organizing the technical program; the scientific committee for their thorough and timely reviewing of the papers, and our sponsors who have helped us to keep down the costs of ISGH 2017 for all participants. Recognition should go to all of organizing committee members who have all worked extremely hard for the details of important aspects of the conference programs and social activities.

On behalf of the organizing committee, I would like to extend a warm invitation to all our colleagues to join us at this event.

ISGH 2017, Conference Chairman
Susiana Nugraha
Relationship between Long Term Use of Depo Medroxy Progesterone Acetate (DPMA) with Menstrual Disorders in Cipendawa Puskesmas Cianjur 2016

1Soffa Abdillah*, 2Budiman
1 Midwifery Diploma AKBID Cianjur
2 Public Health Study Programme STIKES A. Yani Cimahi
*Email: soffa.abdillah@yahoo.co.id

Abstract

One of the government's efforts in controlling the population is by implementing Family Planning Program for women. One of the contraceptive methods used by women is injectable contraception such as Depo Medroxy Progesterone Acetate (DMPA). Each injectable contraception has side effects, including menstrual disorders such as amenorrhoea, irregular bleeding, spotting and excessive bleeding during menstruation. This study aims to determine the relationship between the long term use of DMPA with menstrual disorders in injection contraceptive acceptor. The study used Cross Sectional design. The number of samples in this study were 86 respondents taken with simple random sampling technique. Data collection using checklists and interviews. The result showed that out of 86 respondents 61.6% use DPMA more than 2 years, and 67.4% respondent have menstrual disorder. Statistical test results obtained p value = 0.000 (<0.01) OR 6.052 (CI 90%: 2.255 – 16.240) means that Ho is rejected, it can be concluded that there is a significant relationship between long term use of DMPA with menstrual disorders in Cipendawa Puskesmas Cianjur year 2016.

Key words: long term use of depo medroxy progesterone acetate (DMPA), menstruation disorders

Introduction

Indonesia as the 4th largest country in the world, consisting of 237 million people based on the results of the 2010 census, has a high priority on population issues and a focus on reviving the Family Planning program and women's empowerment (BPS, 2012). In order to control the growth of the population and to improve maternal and child health, the government implemented Family Planning program. Since 29 June 1970 established the Badan Koordinasi Keluarga Berencana Nasional (BKKBN) (BKKBN, 2014) Family Planning with indicator of Contraceptive Prevalence Rate (CPR) and unmet need is included in the Millennium Development Goals (MDGs) year 2015, which is target 5b (realizing access to reproductive health for all by 2015) which is expected to contribute to improvement efforts maternal health (Kemenkes RI, 2013; Mujaiti, 2013). Contraception is expected to suppressed Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR). Based on data from the Intercensal Population Survey (Survei Penduduk Antar Sensus/SUPAS) 2015 both MMR and IMR showed a decrease (MMR 305/100.000 KH, IMR 22,23/1000 KH) (Kemenkes, 2016). Women using contraception are expected to enlarge pregnancy so that no pregnancy is too close which can increase risk complications.

Data of Indonesia Demographic and Health Survey/SDKI (2012), shows that trend of prevalence of Contraceptive Prevalence Rate (CPR) in Indonesia since 1991-2012 tends to increase to 61.9% for all method and 57.9% for modern method. The modern method of CPR is lower than the 2014 RPJMN target of 60.1% and the 2015 MDG's target of 65% (BPS, 2014; Kemenkes 2016). According to the Healthcare Indonesia 2014 report that from 47,019,002 of fertile couples (Pasangan Usia Subur/PUS) that used contraception only 35,202,908 people (74.87%). From the data we can see that contraception method used by women is IUD (11.07%), MOW (3.52%), MOP (0.69%), Implant (10.46%), Condom (3.15%), Injection (47.54%), and Pill (23.58%) (BKBPP Cianjur, 2014).

In West Java Province in 2014 from 9,562,623 fertile couples (PUS) that use contraception only 6.998,177 people (73.18%). From the data we can see that method used by women is IUD
(12.21%), MOW (2.71%), MOP (0.85%), Implant (5.52%), Condom (1.55% ), Injection (52.99%), and Pill (24.17%) (Kemenkes, 2015). According to data from the BKBPP report of Cianjur Regency in 2015 that the use of contraceptives in Cianjur District from 578,182 fertile couples only 409,752 that use contraception (70.87%). From the data we can see that contraception used by women is IUD (7.96%), MOW (0.69%), MOP (0.74%), Implant (5.26%), Condom (1.14% ), Injection (34.08%), and birth control pills (21.02%).

Based on data of annual report of Cipendawa Health Center (Puskemas) in year 2015 known that couples used contraception only 9,378 (65.14%). The method used by couples is IUD (3.56%), MOW (0.66%), MOP (0.08%), Implant (2.32%), Condom (0.13% ), Injections (30.40%), and birth control pills (27.99%).

In Indonesia, the highest contraceptive users are users of injectable contraceptive methods, one of which is a 3 month injection (Depo Medroxy Progesterone Acetat/DMPA). The high demand for injections due to safe, simple, and effective. Estimated DMPA failure rate is less than 0.3% (WHO, 1987; WHO 2012). DMPA when given as 150 mg by deep intramuscular injection every 12 calendar weeks (84 days+5 days), is a highly effective contraceptive with a very low failure rate comparable to modern copper IUDs and lower than many other methods. Family Planning users often experience side effects after the use of family planning. DMPA will affect menstrual bleeding after more than 1 year of use (Biggigg, 1999). The results suggest that after 1 year of use, 55% of women had amenorrhea, after 2 years the incidence increased to 68%. In the first month of use there will be bleeding outside the menstrual cycle and spotting, or in rare cases it can cause severe bleeding (Pfizer, 20017)

Although DMPA user is often found the side effects such as menstrual disorders, but it is difficult to ask clients to change contraceptive methods because they are comfortable with this method.

**Method**

This research uses Cross Sectional research design. The variables of this study consisted of independent variables which is duration use of DMPA, and the dependent variable is menstrual disorder.

The population in this study were all 3 month injections of KB injectors who visited Cipendawa Puskesmas from January to August 2016 as many as 602 people, with a total sample of 86 respondents, taken by purposive sampling technique. Methods of data collection in this study using checklists and interviews. Data analysis in this study used univariate data analysis (frequency distribution) and bivariate (Chi-Square test).

**Results**

1. **Long Term Use of Depo Medroxy Progesterone Acetat (DMPA)**

   **Table 1** Frequency Distribution of Duration Use of Depo Medroxy Progesterone Acetat (DMPA) In Cipendawa Puskesmas Cianjur Year 2016

<table>
<thead>
<tr>
<th>Duration Use of DMPA</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2 year</td>
<td>52</td>
<td>60.5</td>
</tr>
<tr>
<td>1-2 year</td>
<td>34</td>
<td>39.5</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

   Based on table 1 about the duration of DMPA it was found that most of the respondents were most used DMPA more than 2 years as many as 52 people (60.5%).

2. **Menstrual Disorder**

   **Table 2** Frequency Distribution of Menstrual Disorder In Cipendawa Puskesmas Cianjur Year 2016

<table>
<thead>
<tr>
<th>Menstrual Disorder</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Experienced menstrual disorder</td>
<td>58</td>
<td>67.4</td>
</tr>
<tr>
<td>Experienced menstrual disorder</td>
<td>28</td>
<td>32.6</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>
Based on table 2 about menstrual disorder found that most of respondents experienced menstrual disorder as many as 58 people (67.4%).

3. Relationship Between Long Term Use of Depo Medroxy Progesterone Acetat (DMPA) With Menstrual Disorder

Tabel 3 Relationship Between Long Term Use of Depo Medroxy Progesterone Acetat (DMPA) With Menstrual Disorder In Cipendawa Puskesmas Cianjur Year 2016

<table>
<thead>
<tr>
<th>Duration Use of DMPA</th>
<th>Experienced Menstrual Disorder</th>
<th>Not Experienced Menstrual Disorder</th>
<th>Total</th>
<th>OR (CI 90%)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2 year</td>
<td>43</td>
<td>9</td>
<td>52</td>
<td>6,052 (2.255-16.240)</td>
<td>0.00</td>
</tr>
<tr>
<td>1-2 year</td>
<td>15</td>
<td>19</td>
<td>34</td>
<td>16,240</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>28</td>
<td>86</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 3 found that almost all respondents use DMPA more than 2 years experienced menstrual disorders (82.7%), and most respondents used DMPA 1-2 years did not experience menstrual disorders (55.9%).

Chi-square statistical test results obtained \( p = 0.000 < 0.01 \), it can be concluded that there is a significant relationship between long term use of DMPA with menstrual disorders in Cipendawa Puskesmas Cianjur year 2016. Based on the result analysis obtained OR 6.052 this result indicates that women who use DMPA more than 2 years have 6 times risk of menstrual disorders compared with those using DMPA 1-2 years.

Discussion

1. Long Term Use of Depo Medroxy Progesterone Acetat (DMPA)

   Based on table 4.1 about the duration use of DMPA it was found that most of the respondents were use DMPA more than 2 years (60.5%).

   The result of this research is in accordance with research conducted by Siti Aisyah (2015) with title of relation of DMPA with libido in Jatiwates village, Tembelang sub-district Jombang regency, it is found that most of women used DMPA more than 2 years counted 54 people (70.1%) (Aisyah, 2015)

   DMPA when given as 150 mg by deep intramuscular injection every 12 calendar weeks (84 days+5 days), is a highly effective contraceptive with a very low failure rate comparable to modern copper IUDs and lower than many other methods (WHO, 1987)

   Respondents have been using DMPA more than 2 years. The use of DMPA that has lasted more than 2 years has the risk of getting side effects in 3 months injection. As for some of these side effects include menstrual disorders, and weight gain in respondents (Brigig, 1999; Pfizer 2007).

   Respondents at the time of the study, it was found that most respondents experienced menstrual disorders. In general, menstrual disorders that occur in respondents are amenorrhea and irregular menstrual cycles, when compared with before using DMPA.

   DMPA also affects bone mineral density. The FDA recommends that medroxyprogesterone acetate by injection not be used for longer than 2 years, unless there is no viable alternative method of contraception, due to concerns over bone loss. However, a 2008 Committee Opinion from the American Congress of Obstetricians and Gynecologists (ACOG) advises healthcare providers that concerns about bone mineral
density loss should neither prevent the prescription of or continuation of medroxyprogesterone acetate by injection beyond 2 years of use (ACOG, 2008)

2. Menstrual Disorder

Based on table 4.2 found that most respondents experienced menstrual disorder that is as many as 58 people (67.4%).

The results of this study in accordance with research conducted by Pfizer (2004) found that after 1 year of use, 55% of women experience amenorrhea, after 2 years the incidence increased to 68%. In the first month of use there will be bleeding outside the menstrual cycle and spotting, or in rare cases it can cause severe bleeding. The main DMPA disadvantages are menstrual disturbance and weight gain after 1 year and bone mineral density (BMD) is found to be significantly lower.

The results of this study shows that of 58 women who experienced the disorder menstrua, 31 people experienced amenorrhea, 18 people experienced hipomenorea, 6 people experienced hipermenorea, and 3 people experienced oligomenorea.

3. Relationship Between Long Term Use of Depo Medroxy Progesterone Acetate (DMPA) With Menstrual Disorder

Based on the results of the research in table 4.3 above the results of chi-square statistical test obtained that p = 0.000 <0.05, it can be concluded that Ho is rejected, there is a relationship between the duration of use of injecting 3 months injections with menstrual disorders in injection contraceptive injectors Puskesmas Cipendawa Cianjur 2016.

Based on the results of analysis using chi-square obtained that p = 0.000 <0.05, it can be concluded that Ho is rejected, it can be concluded that there is a significant relationship between long term use of DMPA with menstrual disorders in Cipendawa Puskesmas Cianjur year 2016.

The results of this study are consistent with a study conducted by Pfizer (2004) that after 1 year of use, 55% of women had amenorrhea, after 2 years the incidence increased to 68%. In the first month of use there will be bleeding outside the menstrual cycle and spotting, or in rare cases it can cause severe bleeding.

From the results obtained OR 6,052 means that women who use DMPA more than 2 years have a risk of 6 times having menstrual disorders compared with those using DMPA 1-2 years.

Although troublesome, the menstrual disturbances which occur in DMPA users very rarely require operative medical intervention, and can often be improved simply by short courses of oestrogen or shorter injection intervals. Again, women need to know what can be done so that they are aware that they should seek advice early, rather than miserably waiting for their 12 week appointment.

Conclusion

Conclusion: Most respondents use DMPA more than 2 years (60.5%). Most respondents experienced menstrual disorders (67.4%). There is a significant relationship between the long term use of DMPA with menstrual disorders in in Cipendawa Puskesmas Cianjur year 2016 with p 0,000 < (0,01), OR 6,052 (90% CI: 2,255 - 16,240).

References


The Analysis of Different Average of Hemoglobin Increase between Adolescent Girls who Regularly and Irregularly Consume Iron Tablets at Patriot Bangsa Junior High School in January 2017

Wisyana Saridewi*, Rani Sumarni
1.2 Midwifery Departement Stikes Jenderal Achmad Yani Cimahi
Email: wisdyana.spwp@gmail.com

Abstract
Anemia in adolescents is one of health problems that occured in Indonesia. Adolescent girls are more risky to suffer from anemia. In Indonesia, anemia in adolescent girls rises up to 23.9% (Basic Health Research, 2013). Based on MDG’s (2015), the government has projected 30% adolescent girls to be exposed to iron tablet. However, there has been no evaluation of the program. Some health centers in West Bandung District have applied the program, but the number of anemia cases still counts up to 80%. The purpose of this research is to analyze the different average of hemoglobin increase between teenagers who regularly and irregularly consume iron tablet. Analytical research methodology test with non-paired T test was employed. The populations of this study are teenagers whose ages are between 14-15 years old who have experienced anemia in Junior High School of Patriot Bangsa, West Bandung District in January, 2017. This study also used total sampling technique and primary data. The results of the study showed that there was a significant difference of average elevated levels of hemoglobin between teenagers who regularly and irregularly consume iron tablet. It is suggested that the government should evaluate the program regularly, check the hemoglobin and provide the iron tablets sustainably.

Key words: Non-paired T test, Hemoglobin, Adolescent Girls, Iron Tablet

Introduction
Health is significantly important to be maintained to support the successfulness of developments in other fields. Sustainable Development Goals (SDGs) program is a sustainable development program which is expected to be able to cease any forms of malnutrition in 2030. This program is also expected to be able to achieve the 2025 international target to decrease stunting and wasting in infants and to overcome nutritional needs of adolescent girls, pregnant and nursing women and the elderly people (SDGs, 2015). World Health Organization (WHO) data show that the number of adolescents in the world makes up 18% of the total world population (WHO, 2014).

Adolescent girls, at their initial adolescent periods, tend to experience iron deficiency problem (More, 2013). According to WHO, 25%-40% of adolescent girls in Southeast Asia suffer from acute and even chronic anemia (Hapzah and Yulita, 2012). The numbers of iron-deficiency anemia cases caused by the lack of iron consumption which frequently occurring to adolescent ages ranging from 5 to 14 years old reach 26.4% and 18.4% for adolescent ages ranging from 15 to 24 years old (Riskesdas, 2013). Based on gender characteristics, the prevalence of anemia was higher in females, which makes up to 23.9%, than in males, which makes up to 18.4%. Sjöberg’s study (2015) stated that iron deficiency in females increase from 37% to 45%, meanwhile there is a constant result in males at 23%.

Anemia in adolescents can result some implications, such as being prone to infection, lack of studying motivation and the decline of achievements, the decline of physical wellness and reproduction disorder which can cause stunting and pelvic deformity resulting labor and delivery difficulty (Binkesga, 2007). In addition, the implications of anemia during pregnancy period can also cause low birth weight, placenta previa, eclampsia, and premature rupture of membranes (Manuaba, 2010).
One of Indonesia government’s targets to overcome the problem of nutritional needs in adolescent girls is to be able to provide 30% in 2019 Fe tablet which is stated on the Strategical Plans 2015-2019 (SDGs, 2015).

As an initial step of this program, the government allocated 52 tables per adolescent girls annually, which were distributed periodically. The tablet was consumed once a week for adolescent girls who did not suffer from anemia and one tablet per day for adolescent girls who suffered from anemia and were in menstrual period (Puskesmas Cimareme, 2016).

Public health center (Puskesmas) of Cimareme recorded that the number of adolescents who received Fe tablet made up to 68.38% in 2015. However, there is no regular evaluation conducted to this program, such as the evaluation of the hemoglobin level increase in adolescents (Dinas Kesehatan Kabupaten Bandung Barat, 2016).

An initial survey was conducted in the working area of Public health center (Puskesmas) of Cimareme on October 15, 2016 by checking the Hb level of adolescents who already consumed Fe tablet. The result showed that from 15 adolescents, 12 of them (80%) suffered from anemia because of consuming the Fe tablet irregularly. This was caused by various reasons such as forgetting to take the tablet, the tablet was lost, being prohibited by parents, not knowing the significance of Fe tablet, not being able to take medicine and feeling nausea and dizzy after consuming the tablet.

There are many factors contributing to anemia. The study of Tesfaye, et al (2015) showed that gender, size of house, parents’ educational background, parents’ jobs and nutritional status influence the anemia cases in adolescent girls. Furthermore, Nalluri (2014) stated that socioeconomic status has something to do with the prevalence of anemia significantly, especially in the late adolescents.

The result of Kaur’s study in 2016 revealed that the group of participants who were instructed to consume Fe tablet with vitamin C had a significant hemoglobin rise compared to the group who solely consumed Fe tablet.

Therefore, this study was focused on the analysis of different average of hemoglobin increase between adolescent girls who regularly and irregularly consume iron tablets (Fe tablets) at Patriot Bangsa Junior High School in January 2017.

This study was aimed to analyze the different average of hemoglobin increase between the adolescents who consumed Fe tablet regularly and those who took it irregularly based on the time interval and the way it was consumed.

Method

This study is a quantitative study using analytical descriptive methodology, where the design of research employed is pre experimental with Intact Group Comparison. The population involved are 35 adolescents who suffer from anemia whose ages range from 14 to 15 years old. The sample was taken by applying total sampling technique. Primary data was employed as the technique for collecting the data which were then analyzed in univariate and bivariate ways. According to Duque’s study (2014), the rise of hemoglobin level cannot be seen on the first week after the consumption of the Fe tablet. Thus, in this study, the hemoglobin check was conducted both in the beginning before intervention was given and two weeks after the intervention.

Results

The results of the study are the followings:

Table 1. The Distribution of Adolescents’ Regularity Frequency in Consuming Fe Tablet at Junior High School Patriot Bangsa

<table>
<thead>
<tr>
<th>Regularity</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irregular</td>
<td>17</td>
<td>48.6%</td>
</tr>
<tr>
<td>Regular</td>
<td>18</td>
<td>51.4%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1 shows that more than a half of respondents consumed Fe tablet regularly, which makes up to 18 respondents (51.4%)
Table 2. The Distribution of Adolescents’ Regularity Frequency in Consuming Tablet According to Time Interval

<table>
<thead>
<tr>
<th>Time interval</th>
<th>Hb Increase</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>&lt; 24 hours</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>≥ 24 hours</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2 shows that from 35 respondents who consumed Fe tablet with orange water, all of the respondents (35 respondents or 100%) had their hemoglobin level increased.

Table 3. The Distribution of Adolescents’ Regularity Frequency in Consuming Tablet According to the Way It Was Consumed

<table>
<thead>
<tr>
<th>Ways of consuming</th>
<th>Hb Increase</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mineral water</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>Orange water</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Milk</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 3 shows that out of 35 respondents who consumed Fe tablet within time interval ≥ 24 hours, almost all of them had their hemoglobin increased, which consist of 28 respondents (96,6%).

Table 4. Different Average of Hemoglobin Level Increase between Adolescents who Consumed Fe Tablet Regularly and Irregularly

<table>
<thead>
<tr>
<th>Regularity of Consuming Fe Tablet</th>
<th>N</th>
<th>Average</th>
<th>Average Difference (95%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>17</td>
<td>1,094 ± 1,069</td>
<td>1,55 (0,8 – 2,3)</td>
<td>0,000</td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>2,643 ± 1,067</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows that there is a different average in hemoglobin level increase between adolescents who consumed Fe tablet regularly and irregularly, which falls at 1,55 points.
Discussion

One of some factors that can influence the respondents’ self regularity in consuming Fe tablet in this study is the socialization of the benefits of consuming the Fe tablet. By giving the information related to the advantages of consuming Fe tablet, it is expected that the respondents’ knowledge about the tablet can improve. Besides, parents’ support is another crucial factor which can affect the adolescents’ discipline in consuming the tablet. Lastly, the third factor that can influence the respondents’ awareness in consuming Fe tablet is the use of alarm as a reminder for taking the tablet.

Tu’u (2004) stated that the factors which can influence one’s discipline are self awareness, obedience and educational tools. The respondents’ awareness is totally essential in improving the discipline in consuming Fe tablet because this is really influential and tend to last long as it comes from one’s own willingness and not being forced. As an applicational step and practice to manage their behavior, the respondents had their own obedience in consuming Fe tablet. Meanwhile, as an educational tool, the regularity of one’s self in consuming the Fe tablet is an attempt to influence, change, manage and shape the behavior to the better ways for health.

According to Mulugeta’s study (2015), some factors who support the occurrence of anemia in adolescents are the lack of people’s awareness, wrong perception thinking that Fe tablet is one of contraceptive methods, religion factor, cultural influence and the low trust directed at the benefit Fe tablet.

However, there were remaining respondents who were not regular in consuming Fe tablet. The respondents were recorded to be 17 respondents, which makes up to 48,6%. One of the factors resulting the respondents’ irregularities in consuming Fe tablet is being exhausted and going to bed directly. This was related to the aforementioned reason, which is the lack of awareness towards the significance of Fe tablet, in which makes the respondents less aware.

The result of further observation found out that 35 respondents (100%) consumed Fe tablet at night. This occurred because the respondents felt comfortable and unbothered by the nausea feeling that was probably caused by the tablet. In addition, there were also respondents who felt comfortable consuming the tablet at night because they did it along with their preparation for the school on the next day. As shown in Table 4.2, there were six respondents who consumed Fe tablet within time interval < 24 hours. Among those six respondents, five respondents (83,3%) had their hemoglobin level increased, meanwhile one respondent (16,7%) did not have any increase in their hemoglobin level. On the other hand, out of 29 respondents who consumed the tablet within time interval ≥ 24 hours, there were 28 respondents (96,6%) whose hemoglobin levels increase. Meanwhile, there was only one respondent whose hemoglobin level did not increase.

In addition, the further observation was managed by conducting a hemoglobin level check towards the respondents. From this observation, it was found out that out of 35 respondents, 17 of them were not regular in consuming Fe tablet yet more than half of them, who consisted of nine respondents (52,9%), did not suffer from anemia. On the other hand, out of 18 respondents who consumed the Fe tablet regularly, there was remaining one respondent (5,6%) who still suffered from anemia. This occurred because the respondent consumed another substance which inhibited the absorption of Fe, so that the iron cannot be absorbed completely. This is related to the characteristics of Fe which is usually assisted by vitamin C that can help intestines enhance the reduction of absorption as it is able to reduce iron in the form of ferri to be ferro.

The aforementioned discussion is in line with Andjani (2002) and Yanuarti (2014) who stated that the regularity factor of consuming Fe tablet influences the absorption of the iron itself. The iron absorption can be optimum when one consumes Fe tablet with boiled mineral water or orange water which contains vitamin C. Vitamin C is beneficial to absorb iron, so that the absorption of iron in the intestines can be maximal.

Therefore, the media used by the respondents in consuming Fe tablet needs to be considered necessarily to reach the maximum absorption of iron. In Table 4.3, it can be seen that out of 29 respondents who consumed Fe tablet with mineral water, 28 respondents (96,6%) had their level of hemoglobin increased and there was only one respondent who did not have any increase in the hemoglobin level. Meanwhile, there were also three respondents who consumed Fe tablet with orange water and all of them (100%) showed an increase in their hemoglobin level. On the other hand, among three respondents who consumed Fe tablet with milk, there were only two respondents (94,3%) whose level of hemoglobin increased and there was one respondent (33,3%)
who did not have any increase of hemoglobin level. In addition, the average remaining tablet left per respondent is one tablet.

Respondents who had applied the regularity in consuming Fe tablet for 14 days of observation showed the best result by having their level of hemoglobin increased. This was because they consumed it regularly and it is in line with the theory stating that the consumption of Fe tablet is an effective way to increase hemoglobin in short time, yet regularity is needed in consuming the tablet (Health Department of West Java, 2012).

Nonetheless, the increase of Hb level in respondents who did not consume Fe tablet regularly can be resulted by good nutritional consumption, such as consuming green-colored vegetables, nuts and beans, and animal source foods. Iron can be obtained from animal source foods, nuts and beans, green-colored vegetables and Fe supplement (Yanuarti, 2014).

Table 4 shows the different average of the hemoglobin level increase between the adolescents who consumed Fe tablet regularly with the adolescents who consumed it irregularly. The regularity can be identified from some indicators, such as the time interval and the way of consuming tablet Fe. In addition, the ways of consuming tablet Fe observed in this study were using mineral water, milk and orange water. The result of this study is in accordance with Jawarkar’s (2015) which showed the prevalence of anemia in adolescent girls rised up to 55% as well as an increase of average from 10,57 to be 11,78 after intervention respectively.

Conclusion

The average increase of hemoglobin level in the group of adolescent girls who regularly consumed Fe tablet is higher than the group of adolescent girls who took Fe tablet irregularly. The adolescents who consumed Fe tablet within time interval of ≥24 hours still showed an increase of hemoglobin. Furthermore, the adolescents who consumed Fe tablet with orange water were 100% proven to have their hemoglobin level increased compared to those who took the tablet with mineral water and milk.

This study is expected to be able to provide further information concerning the evaluation of the adolescents’ Fe tablet consumption program and to show the most effective technique to consume the tablet, so that the program can decrease the number of anemia cases in adolescent girls globally. Those objectives are in accordance with the target of SDGs program.

Midwives are the providers who hold responsibility to provide services to women throughout their lives. Hence, midwives are necessarily expected to be able to overcome the problem and number of anemia cases in adolescents. Anemia in adolescents can affect their health when they are pregnant, giving birth, nursing and repeating the reproduction cycle again.

It is expected that there will be studies, in the future, that are able to frequently evaluate the adolescents’ Fe tablet consumption program, which also figure out its effectivity, dosage and other beneficial techniques that can be applied, so that the medicine can work more significantly in preventing anemia.

Acknowledgment

All praise is due to Allah who has blessed the researchers with opportunity to keep learning through this study. Then, we would like to thank our Chiefs at STIKES (Higher School of Health Sciences) Jenderal Achmad Yani Cimahi who have supported us to publish the result of this study. We also thank all fellow lecturers at Midwifery Study Program who always support us to keep improving the quality of Tridharma Perguruan Tinggi (Three Pillars of Higher Education), so that we can be professional lecturers. Lastly, we would like to also thank wholeheartedly our families respectively who always support us and pray for our success sincerely.

References


Duque, et al. 2014. Effect os Supplementation with Ferrous Sulfate or Iron Bis-Glycinate Chelate on Ferritin Concentration in Mexican Schoolchildren: A Randomized Controlled Trial. 13:71. http://www.nutritionj.com/content/13/1/71


Manuaba. 2010. Ilmu Kebidanan Penyakit Kandungan Dan Keluarga Berencana Untuk Pendidikan Bidan. Jakarta; EGC


Cortisol Effect on Maternal Pain in the Labor Environmental Settings

1Nanik Cahyati*, 2Fitri Nurhayati
1,2Department of Midwifery, School of Health Sciences Jenderal Achmad Yani,
*Email: nanikcahyati3@gmail.com.

Abstract
A safe and satisfactory birth experience depends on some degree of stress experienced by a woman giving birth. Fear and anxiety can disrupt the subtle neuro-hormonal influences that drive labor and birth, allowing for intervention at delivery and associated with greater potential risk to life for the well-being of women, infants and families. Setting the delivery environment is one of the non-pharmacological methods to divert attention from maternal pain. This study aims to determine the effect of cortisol hormone on maternal pain in the setting of labor environment. This research uses quasi experimental method of pre post test with control group design with 60 mothers in Self-Employment Midwife (in Bahasa Indonesia, it was abbreviated as BPM). Test statistical analysis using Mann-Whitney Test, T Test and Double Regression Test. The results obtained were: there was a difference of average pain between treatment and control group at T1 (4.97 vs 5.67; p = 0.109), and at T3 (8.27 vs 8.50; p = 0.218), whereas in T2 the mean pain of the treatment group was lower than in the control group (6.70 vs 7.30, p = 0.039). There was no effect of percentage increase of cortisol level with labor pain (P> 0.05). Conclusion of this research there was no effect of cortisol on maternal pain in labor environmental setting.

Keywords: Cortisol, maternal pain, labor environment

Introduction
Labor is an unforgettable woman’s experience, and every woman wants a fun, healthy, and comfortable experience both during pregnancy and maternity. For most women in society, they want a natural childbirth without strong pain in their life. One of the factors that increase maternal stress is the physical environment of the delivery room; where most still apply a relatively physically visible (Susilowati, 2014, Jenkinson B, 2014).

Environment is the biggest factor in the healing process in the medical community, which is 40%. The physical environment affects 94% of the easy or difficult to give birth. The environment in labor affects the delivery process but unfortunately is still neglected and tends to provide fear, anxiety, boredom, and stress in pregnant women so as to interfere with subtle neuro-hormonal influences that encourage intervention at delivery and birth (Munro J, Jokinen M, 2012, Hadibowo C, Wardono P, 2014).

Stress is a physiological or psychological tension caused by a stimulus called a stressor that can be formed in a pain stressor. Stressor pain can cause painful sensations or painful disturbances or suppress feelings that can be physical and psychological. The mechanism of stress is characterized by increased secretion of Corticotropine Releasing Hormone (CRH), which acts as a regulator of a number of cortisol in the blood. CRH is secreted into the pituitary portal system which will secrete glucocorticoid hormone, one type of glucocorticoid hormone is cortisol. High levels of cortisol can suppress and increase susceptibility to the immune system. Macrophage lymphocyte cells play a role in the adaptive immune system, cortisol which is a stress hormone, contributes to the adaptive immune system (Kantasa, et., al., 2016).

The fear of birth incidence increased by 6% of all parturient and 8-22% of all reasons for caesarean section. The fear of spontaneous labor experienced primipara often comes from the psychological effects of one of them causing great pain at the time of childbirth, while fear of another delivery is the result of a previous history of uncomfortable labor. The physiological factors of labor pain are due to uterine contractions and cervical dilatation which in this case plays an important role during labor. Psychological factors such as stress due to pregnancy, will increase in the mother who will enter the maternity room and along with stressful situations of factors that affect the perception of pain during labor one of which the environment itself that can affect a
mother's experience of pain and tension so that will affect neuro hormone in the body. (Hadibowo C, Wardono P, 2014).

Fear and anxiety are psychological factors; which considered to be significantly effect the labor pain. Psychological factors in the form of anxiety to face labor have short-term and long-term consequences on both mother and fetus' health (Munro J, Jokinen M, 2012). From the above explanation, one of the main goals in providing intrapartum care is pain management during the delivery. The non-pharmacological approach to pain management includes various techniques that address not only the physical sensation of pain, but also seek to prevent suffering by increasing the psychoemotional and spiritual components of care. The ideal delivery environment is one for non-pharmacological therapy approaches by fostering a sense of comfort and privacy. It can help comfort and places to walk, bathe, and rest. Based on the above background, the authors are interested to conduct research on “Cortisol Effect on Maternal Pain in the Labor Environmental Settings”.

Method

This research uses Quasi Experimental method, with Pre-Post Test Control Group Design on 60 first-stage maternal mothers. Pain assessment using Numerical Rating Scale (NRS) was performed three times: the first measurement (T1) by the time when the mother came to the BPM, second (T2) after 60 minutes in labor and third (T3) at opening 8-9 cm and all pain measurement not under His circumstances. Blood sampling for cortisol examination in the latent phase and 10 minutes of infant after birth. Test statistical analysis using Mann-Whitney Test, T-Test, and Double Regression.

Results

Table 1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Group</th>
<th>P Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1. Mother’s Age (yr) :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>4</td>
<td>13,3</td>
</tr>
<tr>
<td>20-35</td>
<td>26</td>
<td>86,7</td>
</tr>
<tr>
<td>2. Educational Background:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic (Primary – Junior)</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>High)</td>
<td>17</td>
<td>56,7</td>
</tr>
<tr>
<td>Intermediate (Senior High)</td>
<td>7</td>
<td>23,3</td>
</tr>
<tr>
<td>Advance (Higher Education)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Annotation: *) Fisher Exact Test; **) Chi Square Test

Based on table 1, the results of statistical test differences in the characteristics of subjects based on age obtained p value = 1,000 and for education p = 0.107. The results of this test indicate that there is no significant difference (p> 0.05) between maternal characteristics in the intervention group and maternal mothers in the control group.

Table 2

<table>
<thead>
<tr>
<th>Cortisol (µg/dl)</th>
<th>Group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
<td>p Value</td>
</tr>
<tr>
<td></td>
<td>(n = 30)</td>
<td>(n = 30)</td>
<td></td>
</tr>
<tr>
<td>Pre Mean (SD)</td>
<td>371,20 (121,84)</td>
<td>429,12 (245,55)</td>
<td>0,988*</td>
</tr>
<tr>
<td>Median</td>
<td>361,21</td>
<td>334,18</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>140,00 – 579,86</td>
<td>160,05 – 895,83</td>
<td></td>
</tr>
<tr>
<td>Post Mean (SD)</td>
<td>546,13 (167,04)</td>
<td>760,19 (263,85)</td>
<td>&lt;0,001**</td>
</tr>
<tr>
<td>Median</td>
<td>523,374</td>
<td>799,797</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 presents the cortisol differences from both the measurement and the percentage of improvement. Appearance at the measurement of pre (latent phase) between the two groups did not show any significant difference (p = 0.988); whereas in post-measurement (10 min after infant birth) and percentage of improvement showed significant difference (p < 0.05). Increased cortisol (%) in the intervention group (57.3%) was lower when compared to the control group (108.21%).

Table 3 presents pain scores differences in both study groups from all three measures. In the first measurement of pain scores, both groups were not significant (p = 0.109) while in the measurement of both pain scores was significantly different when compared with control group (P = 0.039) while in the third median score the pain score in both groups was not significant (p = 0.218).

Table 4 Cortisol Levels Effect and the Regulation of Labor Environment on Maternal Pain Score

<table>
<thead>
<tr>
<th>Variable</th>
<th>CoefficientB</th>
<th>SE (B)</th>
<th>Coefficient Correlation</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The initial model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The labor environment setting</td>
<td>0.152</td>
<td>0.445</td>
<td>0.082</td>
<td>0.573</td>
</tr>
<tr>
<td>% Cortisol level rises</td>
<td>0.002</td>
<td>0.003</td>
<td>0.109</td>
<td>0.422</td>
</tr>
<tr>
<td>The first pain score</td>
<td>0.311</td>
<td>0.136</td>
<td>0.327</td>
<td>0.020</td>
</tr>
<tr>
<td>Final model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The first pain score</td>
<td>0.288</td>
<td>0.119</td>
<td>0.304</td>
<td>0.018</td>
</tr>
<tr>
<td>Permanent</td>
<td>6.923</td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Annotation: *) r² = 9.2%.

Based on the results of the multiple regression analysis above, it appears that multivariable percentage of cortisol levels increase and the regulation of birth environment did not correlate significantly with maternal pain score (third measurement). From the final model, the
Discussion

The subject characteristics seen in the study depicted on age and education level. The subject of this study is mostly aged 20-35 years, and the level of education pursued in this study is mostly high school. According to Swelling et al., education and age in general may affect maternal psychosocial in addition to the preparation and expectation of labor to be lived.

From the research, there were no significant differences (P> 0.05), but post-baby measurement was significantly different (p <0.05). This cortisol level increases during pregnancy and continues to increase until labor. In one study, cortisol levels in saliva during labor increased from 27.8 ± 2.2nmol / L in the first stage of labor to 64.1 ± 4.2 nmol / L soon after birth placenta, followed by a decrease to 12.6 ± 1.3 nmol / L in the next 17 hours. However, the increase of cortisol (%) in the intervention group (57.3%) was lower when compared to the control group (108.2%), this was because the maternal cortisol levels were affected by two physiological mechanisms ie feto-uteroplacental and bone corticosteroid feedback behind negative stress response HPA-axis, this is what underlies the measurement of cortisol hormone as a biomarker of stress in humans. The cortisol examination may provide clues about the sensitivity of HPA-axis components during labor and manipulation justified through interventions to reduce psychophysiological stress during labor. In labor, maternal cortisol levels are affected by acute stress. Anxiety and excessive stress (distress) will cause hormone imbalance that causes stress response resulting in increased hormones catecholamine and cortisol (Buckley SJ, 2015).

Differences of pain scores in the treatment group with the control group at the first measurement (T1) were performed in the maternal mother at the time of the latent phase and newly entering the delivery environment. There was no difference in pain score between the treatment group and the control group (P> 0.05).

Maternal pain is the context of an individual woman formed from the process of physiology, psychology. According to Read (1994) stresses that the intensity of pain during labor is primarily related to emotional tension. The results of another study showed that women who first became pregnant experienced more severe sensory pain compared with the apparently mildly multipara pelvic pain during labor as a result of stimuli from the nociceptor in the vagina, vulva, perineum and rapid fetal decline. This indicates that the condition of the mother is in the same condition so that the pain score before treatment has the same value (Lowe NK, 2002, Labor S, 2008).

The second examination was performed when the mother had adapted 60 minutes with the environment in labor environment and the result showed that there was a significant difference with the result (P = 0.039). This shows that a physical environment has an effect on thinking, feeling, and human behavior. A designated environment in which space can provide stimuli (stimuli from outside) that can be responded by the human senses system (sight, hearing, taste, smell, and touch), where psychologically potentially form a perception that is not directly affect the emotional as well as human behavior.

Based on research conducted by Debri entitled Relation Implementation of Elements of Interior Healing Environment at Inpatient Room in Reducing Stress, this research is one of proving that interior space has an influence on thinking, feeling, and human behavior. This stress condition is recognized by the patient can be minimized through the application of healing environment elements in the interior of the inpatient room. The concept of healing environment which is one of the concept of forming a maintenance environment that combines physical and psychological aspects of the patient in it which aims to accelerate the process of adaptation of the patient so that with the physical limitations of a patient can adapt quickly which affects the decrease of stress level. (Princess DH, Widihardjo, Wibisono A, 2013)

Based on a multivariable analysis the percentage increase in cortisol levels and the setting of birth environment did not correlate significantly with maternal pain score (third measurement). From the final model, the effect of pain score (first measurement) on the increase of maternal pain score (third measurement) is 9.2%, and the rest 90.8% are unexamined factors.

In this case the delivery environment gives a great effect on the mother of every individual require adaptation of new environment as in this research is labor environment. The process of labor has a great effect on comfort, anxiety, fear, the smoothness of labor and patient satisfaction so that stress in labor is defined as psychological stress, which is a combination of fear.
and pain, experienced by women during childbirth itself affects a mother’s experience of taste sick. By setting the environment with attention to 5 senses by giving the impression of a relaxed, cool and comfortable will affect the hormone endorphins so that pain can be overcome.

In the case of labor pain caused by the release of oxytocin, hypoxia (lack of oxygen) in the uterine muscle, uterine muscles contracting cervical stretching, tubal pull, ovaries and ligaments of uterine ligaments, uterine ischemia (decreased vascularization and oxygen deprivation in the area) from compression of the arteries supplying to the myometrium during uterine contractions, the pain at the onset of labor has not been too painful and is not always sensitive to opioids. The pain at the end of the first and second stage of labor is closer to birth, quite distinctive and easily localized within the vagina, rectum and perineum (Lowe NK, 2002, Labor S, 2008, Gupta S, 2006).

In the case cortisol also acts on the immune system and endogeneous opioid system. Although these opioids come out within a few minutes, their initial function may only be to inhibit or modulate the release of cortisol.

An intravenous study of intravenous epinephrine to 10 women to reduce uterine contractions by 55% takes 2 minutes. In experimental studies with animals showed that the analgesic effect on them did not show up for 30 minutes after the pain (Buckley SJ, 2015, Dixon L, Skinner J, Foureur M, 2013). It could be assumed that there is no correlation with the maternal response in response to the available physical environment, when responding to something happens because we get external stimuli received by the five senses. The total time required to respond to a stimulus is called reaction time. The reaction time of a person responds to a very fast stimulus of approximately 150-200 milliseconds but the adjustment to his environment depends on the level of adaptation of the person concerned in his environment. The level of adaptation is not only different from one human to another so that the function of experience but occurs due to differences in stimulation levels from time to time. The level of adaptation will occur shifting the tolerance threshold of a person to the stimulus environment continuously provide stimulation, then it will decrease standard and follow the will of the environment. (Sutalaksana IZ, 2006, Sarwono SW, 1992)

Besides, it is a subjective pain although the mechanism is unclear, even the brain structure that causes the perception is also unclear, the pain threshold of each individual is different, the pain threshold will come down when we feel tired, anxious, angry, depressed, scared and isolated. The ability of a person to manage the stress experienced (coping) is different, in this case adaptive coping pattern will facilitate someone overcome the pain and vice versa maladaptive coping pattern will make it difficult for someone to overcome the pain. Pain perception is influenced by subjective factors, so pain is fundamentally subjective experience (Fraser MD, Cooper AM, 2009, Kitahat LM, 1994).

This is supported by the study of Ye (2009) which states that mothers who have a good understanding of the birth process, the level of pain will be felt lighter than the mother who has poor understanding. A good understanding for mothers can reduce the fear and make mothers do not experience excessive tension. In theory, according to Caceres and Burn 2010, a good perception for the mother can also come because she is more focused on gratitude because it can experience the process of labor, whereas in mothers who have poor perception, the anxiety will be increased so that there is a cycle of pain – stress – pain and so on.

Conclusion
Our research shown that there is a difference in labor pain in the second measurement, 60 minutes after the mother’s adaptation in labor environment. However, there is no correlation of cortisol level increase to labor pain in the delivery environment.

Acknowledgment
The funding of this study is excluded from private. Acknowledgments goes to Stikes Jendral A. Yani Cimahi who has provided support to this research and to the Lab at the Faculty of Medicine Unpad and ITB interior design team who has assisted in the implementation of this research.

References

Fraser MD, Cooper AM. 2009. *Myles Buku Bahan Ajar kebidanan*. EGC.


Melzack R. 1999. *From the gate to the neuromatrix*. International Association for the Study of Pain. Elsevier Science BV.


A Systematic Review: Effectiveness Breastfeeding Mode on Reducing Mother to Child Transmission of Human Immunodeficiency Virus (HIV)

1 Amalia Zulfah Wijaya*, 2Arumi, 3Wahyu Sulistiadi
1,2 Ministry of Health, Jakarta, Indonesia
3 Universitas Indonesia, Depok, Indonesia
*Email: amalia.wijaya@yahoo.com

Abstract

IV incident and mother to child transmission among women during pregnancy and lactation. The Majority of new HIV infection in children younger than 15 years are believed to have stemmed from mother to child transmission. Breastfeeding is important component to provide optimal nutrition where it’s not contaminated by HIV. This study is intended to investigated the save and effective breastfeeding mode to reduce the Mother to Child Transmission of HIV. The literature databases were searched by Springer, Proquest, Science and Jstorey using spesific keyword. The selected articles were assessed by using Systematic Review method PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analyses) procedure, finally found 10 article journal to be analysed. The result findings showed that Exclusive Breast Milk Substitute (EBMS) is the savest mode compare with exclusive breast feeding (EBF), and the biggest risk where mothers did mixed feeding (MF). But, some country promoted EBF depend on some different and dimensions among countries. For the better result is breastfeeding must be avoided, even at term in mothers with reduced viral load and EBMS must be promoted as the savest and the most feasible mode of infant feeding.

Keywords: Breastfeeding, HIV, National Guidelines, Mother to child Transmission

Introduction

HIV infection is a major global health issue. The Joint United Nations Programme on HIV/AIDS (UNAIDS, 2017) state that there are 30 million people living with HIV across the world and approximately 1.6 million are children under 15 years old (0-14 years old). Mother to child transmission (MTCT) is a major cause of childhood HIV status and continuous to pose a worldwide challenge.

Save infant feeding practices remain an integral part of prevention of mother to child transmission of HIV (PMTCT). The 2010 World Health Organization (WHO) guidelines on infant feeding in the context of HIV infection recommend that infant feeding practices should support the greatest likelihood of infant HIV-free survival, while also protecting against non-HIV morbidity and mortality (WHO, UNAIDS, UNFPA, 2010).

Breastfeeding is important component of the wellbeing and survival of children. Breast milk provides optimal nutrition, contains antibodies that protect infant from infection, but this condition will become a poison when the milk become contaminated. Mothers with HIV could potentially transmitted HIV to the baby through breastfeeding, depend on breastfeeding mode and the duration of feeding can increase the risk of vertical transmission, so the best choice is by avoiding breastfeeding (Kourtis & Bulterys, 2012).

According some policy in other country they make exclusive breastfeeding is the best choice for mothers with HIV, research has shown that reducing the transmission risk therefore can be achieved by decreasing the viral load in the mother from antiretroviral (ARV) drug therapy in pregnancy (Tudor Car et al., 2011), and the risk of transmitted HIV can be decreased even when mothers breastfeed the baby. That’s all infant feeding by HIV infected mothers still become health dilemma and highly controversial matter.

Indonesia’s government have get strategy to reduce the incidence that all pregnant women must get the laboratory test for HIV at their first antenatal visit and remain vulnerable to HIV infection during pregnancy and after delivery. Early intervention is needed to decrease viral load, hope the baby could be free from HIV, but that effort must be continued with specific follow
up, baby viral load check, baby therapy, breastfeeding status to make sure HIV zero infection, but there still much of lost to follow up. This systematic review was conducted to identify evidence on risks related to the breastfeeding mode to minimize and decrease the HIV infected to the baby in some country and can be best practice for Indonesia.

**Method**

We conducted this systematic review according to preffered reporting item for systematic reviews guidelines (Moher et al., 2015)

**Key question**

We identify three key question of interest:

Key Question 1: What is savest breastfeeding mode?
Key Question 2: Some Perception and Reason “Why they should give breastfeeding?”
Key Question3: What is the best choice of mothers with HIV to eliminate and reduce transmission to the baby in Indonesia?

**Literature search**

We searched the PubMed database for all relevant articles published in 2010 until 2017 using the following search strategy:

Using key word (“Breastfeeding” and “Exclusive Breast Feeding” and “mother to child transmission”) and (“HIV” or “HIV infection” or “Acquired Immunodeficiency Syndrome” or “Mother To Child Transmission of HIV”). We searched for all primary research articles, we also searched reference lists of identified articles and relevant review articles for additional citations of interest. We did not consider unpublished studies, abstracts of conference presentations or dissertations.

From the total 683 articles and 1 books with relevant content, 199 were selected based on the title. These were filtered based on the spesific objective of the research and eliminating the duplications, to obtain relevant articles. Among these, 187 were checked by the abstracts and 108 were excluded. The articles were reassessed, searching full-text for eligibility. After 29 articles were found then selected by inclusion criteria and reviewed. Finally, 10 articles were reviewed.

**Selection criteria**

Articles were included in this review if they were primary research articles on adverse outcomes among women with HIV who have choice breastfeeding the baby or not. The population of interest was women with HIV particularly those with baby HIV transmission result even positive or not as defined by study authors. The breastfeeding style EBF, EFF, MF or unspecified style. For key Question 1, the reference group of interest was mothers with HIV disease as defined by study authors to allow for assessment of differences style (EBF, EFF, MF or unspecified style) to breastfeed related to HIV transmission to the baby that assessed the HIV status in different ages. Because studies employed varying definitions for levels and intervention (e.g., CD4 counts, World Health Organization (WHO) staging antiretroviral therapy (ART) use), we included all articles in which comparisons were reported between women breastfeeding in different style. Given the limited evidence on this topic, we also included studies comparing women who breastfeeding and non breastfeeding and studies that did not have a comparison group. Outcomes of interest included diarrhea, mortality infant or any infectious complication. For key Questions 2 and 3, the reference group of interest was women with HIV who breastfeeding the baby, the reason, so we need some article with qualitative study design in order to allow for assessment of the impact of breastfeeding on disease outcomes. Given the limited evidence, we also included studies that did not have a comparison group even in outcomes some of study did not state the result of HIV transmission to the baby. Some study also did not state CD4 count, plasma RNA, ART initiation.

**Study quality assessment and data synthesis**

We summarized and systematically assessed the evidence. We considered several study features that could impact study quality and potential biases. Related to the study population, we assessed factors such as whether the study included adequate sample size, sufficient different length of follow up and appropriate comparison groups. Related to HIV disease, we assessed
whether studies reported transmitted HIV disease at baseline, included women who breastfeed the baby as reported by study authors and reported or controlled for ART use. We assessed whether studies specified breastfeeding style and timing of breastfeeding period and whether studies clearly defined measurement of outcomes. We also assessed whether studies controlled for important confounding factors such as using of ART consumption and therapy. Summary measures were not calculated due to heterogeneity of study designs and outcomes measured.

Fig 1. Flowchart of Systemic Review Procedure
### Results

<table>
<thead>
<tr>
<th>Study (author, year, country)</th>
<th>Study design</th>
<th>Participant</th>
<th>ART type, period</th>
<th>HIV disease transmitted to child (outcome in period of ages)</th>
<th>The way to breastfeeding</th>
<th>Result</th>
<th>Country police</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Goga et al., 2012), South Afrika</td>
<td>Prospective observational cohort study</td>
<td>665 HIV(+) and 218 HIV(-) women were recruited antenatally and followed-up until 36 weeks postpartum</td>
<td>HIV infected mothers receive ARV</td>
<td>EFF reduced the risk hospital diarrhea OR 0.59, 95% CI:0.30, 1.12</td>
<td>Feeding data loss to follow up</td>
<td>MFF at 5 weeks higher risk of subsequent HIV compares with EFF</td>
<td>Breastfeeding even in high prevalence HIV setting like South Africa</td>
</tr>
<tr>
<td>(Moodley et al., 2011), Kwazulu Natal, South Africa</td>
<td>Explanatory cohort study</td>
<td>Pregnant women older than &lt;28wk of gestation confirm by ELISA laboratory</td>
<td>Not identified</td>
<td>Monitored over a period of 18 month (6 month during pregnancy and 12 mo after delivery)</td>
<td>(+) pattern</td>
<td>91 dari 964 confirm HIV (+) by age 12 mo</td>
<td>Women with CD4 count &lt;200 referred for ART</td>
</tr>
<tr>
<td>(Anigilaj)</td>
<td>Retrospective</td>
<td>801 HIV uninfected</td>
<td>Not identified</td>
<td>Monitored at 3 month EBF:Exclusive MF= 75.7% - 69.8%</td>
<td>94% (751 of</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1 Data Results**


<table>
<thead>
<tr>
<th>Study Details</th>
<th>Participants</th>
<th>Randomization</th>
<th>Breast Feeding Summary</th>
<th>Frequency of Breastfeeding</th>
<th>HIV Infection Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>É, Dabit, Olutola, Ageda, &amp; Aderibigbe, 2015, Makurdi, Nigeria</td>
<td>3016 infants</td>
<td>Randomized, controlled, open-label, phase 3 clinical trial, infants were randomly assigned at birth to receive one of three regimens</td>
<td>Exclusive Breast Milk Substitute</td>
<td>The frequency of breastfeeding did not differ significantly among the study groups</td>
<td>At 9 months, the estimated rate of HIV-1 infection (the primary end point) was 10.6% in the control group, as compared with 5.2% in the extended-nevirapine group (P&lt;0.001) and 6.4% in the extended-dual-prophylaxis group (P = 0.002). There were no significant differences between the two extended-prophylaxis groups</td>
</tr>
<tr>
<td>(Kumwenda et al., 2008), Blantyre, Malawi</td>
<td>3016 infants</td>
<td>Randomized, controlled, open-label, phase 3 clinical trial, infants were randomly assigned at birth to receive one of three regimens</td>
<td>Mixed Feeding</td>
<td>EBF=97.4% - 92.5%, EBMS = 99.1% - 86.2%</td>
<td>801) mothers received HAART</td>
</tr>
<tr>
<td>(Somé et al., 2017), Burkina Faso (n=204), South Africa (n=213),</td>
<td>1225 mother-infant pairs</td>
<td>Clinical trial; flexible parametric</td>
<td></td>
<td>(1) exclusive breastfeeding during the first six months, the median durations of any form of breastfeeding and EPBF were 40.6, and 20.9</td>
<td></td>
</tr>
</tbody>
</table>
Faso, South Africa, Uganda and Zambia

EPBF than has been seen in several previous studies. However, in Burkina Faso, late initiation of breastfeeding postpartum and the extensive use of prelacteal feeds remain prevalent. Why women in the lopinavir/ritonavir arm were more likely to stop EPBF in South Africa is a question requiring further investigation. There is a need to improve breastfeeding and complementary feeding practices of children, particularly those exposed to HIV and anti-retrovirals, taking into account context and socio-demographic factors.

Babies randomized to the lopinavir/ritonavir group in South Africa tended to do less EPBF than those in the lamivudine group. Better educated (at least secondary school level), employed or having undergone C-section stopped any breastfeeding early.

- only breast-milk being given to infant for 6 months
- predominant breastfeeding, breast-milk with liquid-based items being given
- mixed feeding, other non-breast milk or solid food being given in addition to breast milk with or without liquid-based items
The search identified 683 article, of which 10 met inclusion criteria (Figure 1). Two article were identified from cohort study, one retrospective study, one articles randomized control study, one articles clinical trial, one article describing cross sectional survey, three articles cross-sectional survey, and two articles describing qualitative studies.

**Key Question 1: What is savest breastfeeding mode?**

Five articles addressed compare the HIV transmission in different breastfeeding ways (Table 1). Study on (Moodley et al., 2011) showed that 99 of 964 HIV exposed children were confirmed to be HIV infected by age 12 month (overall MTCT rate 9.4% (95% CI, 7.7 – 11.5). A larger proportion of infants born to HIV seroconverters were also infected (20.5% (8 of 39) vs 9.0% (83 of 925)). Children born to HIV seroconverters were at 2.3 times higher risk of also being infected (odds ratio, 2.29; 95% CI, 1.19-4.38; P = 0.024. overall, 64 of the 91 (70%) perinatal HIV infection were seemingly acquired during pregnancy and labor/delivery. Among these, 44% (n=28) occurred in utero, 39% during labor/delivery, and the remaining 17% that were not known whether they were acquired either in utero or during labor/delivery. Infants born to women with a CD4+ count <350 had a higher risk of vertical HIV infection, although this relationship was not statically significant HIV-1-free survival rates for infants born to women with established HIV infection and women who seroconvertered during pregnancy or postnatally were 87.3% and 77.5%, respectively.

The difference in HIV-1-free survival at 12 mo after delivery is estimated to be 10% (p=0.077). the MTCT rate was significantly higher among women with establish HIV infection (47 of 451; 10.4%) with a CD4+ <350 and among the HIV seroconverters with CD4+ >350 (3 of 16; 18.7; P=0.049). neither of the 2 seroconverting women with CD4+ <350 transmitted HIV to their infants.(Somé et al., 2017)There is a need to improve breastfeeding and complementary feeding practices of children, particularly those exposed to HIV and anti-retrovirals, taking into account context and socio-demographic factors.

Study on (Anígilájé et al., 2015) showed that 801 HIV uninfected infants at 6 weeks of life were studied in accordance with their reported cumulative feeding pattern. This includes 196 infants on exclusive breast feeding (EBF); 544 on exclusive breast milk substitute (EBMS) feeding and 61 on mixed feeding (MF). The overall HFS was 94.4% at 3 months and this declined significantly to 87.1% at the 18 months of age (p-value = 0.000). The infants on MF had the lowest HFS rates of 75.7% at 3 months and 69.8% at 18 months. The HFS rate for infants on EBF was 97.4% at 3 months and 92.5% at 18 month whilst infants on EBMS had HFS of 99.1% at 3 months and 86.2% at 18 months. A higher and significant drop off in HFS at the two time points occurred between infants on EBMS (12.9%) compared to infants on EBF (4.9%), p-value of 0.002, but not between infants on MF (5.9%) and EBMS, p-value of 0.114 and those on MF and EBF, p-value of 0.758. In Cox regression multivariate analyses; MF, gestational age of < 37 weeks, and a high pre delivery maternal viral load were consistently associated with HIV infection or death at 3 months and 18 months (p <0).
Table 2. Key Question 2: Some Perception and Reason “Why they should give breastfeeding ?”(AOTA, 2015)

<table>
<thead>
<tr>
<th>Study (author, year, country)</th>
<th>Level of Evidence/Study Design/Participant/Inclusion Criteria</th>
<th>Intervention and Control Groups</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Hazemba, Ncama, &amp; Sithole, 2016a), Zambia</td>
<td>Explanatory qualitative study</td>
<td>30 HIV (+) mothers, 6 key informants</td>
<td>four major themes that related to factors influencing the decision to exclusively breastfeeding in the context of PMTCT:</td>
</tr>
<tr>
<td>(Mnyani et al., 2016), Soweto, Johannesburg, South Africa</td>
<td>Cross-sectional survey</td>
<td>190 pregnant and 180 postpartum (74 and 67 were HIV positive)</td>
<td>Women HIV (-) 80.9% (93/115), reported an intention to exclusively breastfeeding, compared to 64.9% (48/74) of women HIV (+), p = 0.014. Not having HIV was positively associated with a reported intention to breastfeeding, Adjusted Odds Ratio (AOR) 3.60, 95% CI 1.50, 8.62. Among postpartum women, knowledge of safe infant feeding practices associated with reported exclusive breastfeeding, AOR 2.18, 95% CI 1.52, 3.12.</td>
</tr>
<tr>
<td>(Kafulafula, Hutchinson, Gennaro, &amp; Guttmacher, 2014), Blantyre, Malawi</td>
<td>Kualitative</td>
<td>16 HIV positive, nurse-midwife</td>
<td>Most of HIV (+) mothers choose EBF in Malawi are poor, have problem in finding adequate and appropriate food for themselves</td>
</tr>
<tr>
<td>(Hampanda, 2016), Lusaka, Zambia</td>
<td>Cross-sectional face to face survey</td>
<td>320 married women (+) HIV,</td>
<td>Women who experienced intimate partner violence have 2.8 higher adjusted odds of early mixed infant feeding (p&lt;0.001)</td>
</tr>
<tr>
<td>(Genetu, Yenit, &amp; Tariku, 2017), north Gondar zone, Ethiopia</td>
<td>Cross-sectional study</td>
<td>Pair of mother-child (367)</td>
<td>HIV exposed infants was 86.4%. According to the multivariable analysis: breastfeeding counseling (Adjusted Odds Ratio [AOR] = 5.1, 95% Confidence Interval [CI] 1.4, 18.2), breastfeeding support (AOR = 3.7, 95% CI 1.3, 10.5), and not experiencing obstetric problems (AOR = 3.4, 95% CI 1.3, 8.8) were associated with higher odds of continuous breastfeeding.</td>
</tr>
</tbody>
</table>
Key Question 2: Some Perception and Reason “Why they should give breastfeeding?”

Eight articles addressed some perception and reason why mothers choose breastfeeding her baby.

_**Cultural norm**_

On (Hazemba, Ncama, & Sithole, 2016b) shows that some mothers are not understanding the risk of mixed feeding, as a cultural norm believe that crying baby after get breastfeeding is the sign that baby need some food, the perception by some mothers that breastmilk is sometimes not enough. On (Hazemba et al., 2016b) Knowledge gaps due to inadequate infant feeding counselling may have contributed to the mothers, perceived breast milk insufficiency associated with the baby crying even after breastfeeding.

_**Maternal education**_

Statistically significant associations were observed between prenatal intended duration of EBF and maternal education \( [X^2 = 21.686, \phi = -.444, p < .01] \) (Kafulafula, Hutchinson, Gennaro, Guttmacher, & Kumitawa, 2013). Higher maternal education in the current study was associated with reduced prenatal intended duration of EBF. (Genetu et al., 2017) Shows a higher proportion of HIV infection was noted among children who were given prelacteal feeds, whose mothers were illiterate (71.4%) and who experienced an obstetric problem (57.1%)

_**Economy**_

Some says the economy become the reason. Majority (83%) of participant were classified as middle socio economy status. These reason included lack of money to purchase infant formula (Kafulafula et al., 2013)

_**Disclosure of HIV AIDS**_

Some of them shows the one who did not breastfeed the baby identical with HIV, so they don’t want the others know their disease. To conceal their HIV status because choosing not to breastfeed was as self revealing one’s HIV status (Kafulafula et al., 2013) even it failed to prove the significant (Fisher’s Exact Test at \( p=.079, \phi = -.168, p > .05 \))

_**Partner violence**_

Intimate partner violence have 2.8 higher (\( p<0.001 \)), experienced emotional violence, specifically, have 1.9 higher (\( p<0.001 \)), violence have 2.3 higher adjusted odds (\( p<0.01 \)) adjusted odds of early mixed infant feeding (Genetu et al., 2017) Shows all (100%) of the HIV infected children were from mothers who did not receive any breastfeeding support and gave birth virginally

**Discussion**

For completing this discussion based on the evidence pour in the key question 1 and 2, we’ll identify key question 3 for discussion

Key Question 3: The best choice of Mothers with HIV to eliminate and reduce transmission to the baby in Indonesia.

Based on policy shows that the highest transmission can be identified (Anígilájé et al., 2015) article that addressed Exclusive Breast Milk Substitute is the savest style and has the minimum risk HIV transmitted HIV from mother to the baby 99,1% - 86,2%, and Exclusive Breast Feeding (EBF) also has the low risk 97.4% - 92.5%, and the biggest risk when mothers do Mixed Feeding 75.7% - 69.8%. EBF is a better and safer option for feeding infants in most of the sub-Saharan Africa. EBF (defined as feeding an infant no fluids or other feeds other than breast milk for the first six months of the infant’s life) reduces childhood morbidity and mortality from diarrheal diseases (Goga et al., 2012). In addition, EBF carries a 4-10 fold decreased risk of mother to child transmission (MTCT) of HIV compared to mixed feeding during the infant’s first six months of life. The World Health Organization and the Malawi Ministry of Health (National Department of Health South Africa, 2014) recommend that mothers exclusively breastfeed their children for the first six months of the child’s life as part of prevention of mother-to-child transmission (PMTCT) of HIV.

Breastfeeding provides immunity against diarrhoeal disease and pneumonia, but these benefits have to be balanced against the risk of HIV transmission via breastfeeding. Replacement
feeding when exclusive is expected to prevent HIV transmission that occurs via breastfeeding. However, in areas where water supply is unsafe and poverty is rife, it increases infants’ mortality from diarrhoea and malnutrition. Therefore, the WHO recommends replacement feeding as an alternative to breastfeeding only when it is affordable, feasible, acceptable, safe and sustainable (AFASS). Unfortunately, in Nigeria, the AFASS criteria are rarely met even in programmes where Breast Milk Substitutes (BMS) are provided free of cost and mixed feeding is a common practice. Mixed feeding combines the risk of HIV transmission through breastfeeding with the increased risk of mortality associated with replacement feeding.

Exclusive Breast Feeding has potential to reduce infant and under five mortality, but research shows that in a fact as a culture that mother should breastfeed the baby, but to practice exclusive breastfeeding, HIV positive mothers may have to go against cultural norms that practice early introduction of fluid and mixed feeding. It was just dilemma, that they couldn’t give exclusive breast feeding in the other side poor sanitary condition and the probability of inappropriate use of formula that can lead to diarrhoea and dehydration that cause of infant mortality.

Results revealed high exclusive breastfeeding prenatal intentions among HIV-positive mothers. Prenatal intended duration of exclusive breastfeeding was positively associated with normative, control beliefs and negatively associated with beliefs, maternal education and disclosure of HIV status. The result findings is how is the way to breastfeed the baby to get save and minimize the mother to child transmission of HIV using analysis and there were different dimensions among countries. To get optimal prevention of MTCT, all women who seroconverter during pregnancy or lactation should be considered for ART for the purpose of prevention of MTCT, and women with CD4+ <350 should continue to receive ART. The infant feeding dilemmas for women with HIV are complex. The integration of public health efforts with context specific socio-cultural understanding is needed to make sure that the mothers get best choice to breastfeed exclusively or not at all. According some article says about cultural norm related to perception insufficiency associated with the baby crying even after breastfeeding increase potentially mixed feeding of breastmilk with other fluids and foods. To face the partner violence, empower women must be supported by all sectors, this is related to economy, and education, better economy and education guarantee decreasing partner violence.

According some result on that study, we can compare with Indonesia setting, based on (UNICEF, 2015) the incident death under 2 years in Indonesia is under from Nigeria, Nigeria Rank for under 5 mortality rate is number 7 with value 109 and Indonesia is number 77 with value 27 with enough stable condition and minimize internal and external conflict possibly to fulfill EBMS with AFASS. So the first choice that may offer is EBMS, because it’s savest for the baby. Some of the way to face the fact in Indonesia, the goal indicator exclusive breastfeeding is still low about 42% (Indonesia, 2012). So it will make easier to implement EFF in Indonesia.

Conclusion

For the better result is mix feeding must be avoided, effort to deliver babies at term in mothers with reduced viral load are advocate and EBF can be promoted as the save mode of infant feeding. And if possible, when country can make sure to replace breast feeding with EBMS when acceptable, feasible, affordable, sustainable dan safe requirement can be fulfilled. And much more of Indonesia setting is possible, so the baby deserve to get the best choice by zero HIV contamination nutrition in their life. The infant feeding dilemmas for women with HIV are complex, that research showed EBMS is the most effective ways to stop HIV transmission, in the other side they couldn’t fulfill AFASS condition. So, Indonesia must make sure that AFASS is available. And government must show commitment on evaluating the use of ART for all mothers with HIV. The integration of public health efforts with context specific socio-cultural understanding is needed to make sure that the mothers get best choice to breastfeed exclusively or not at all.
Acknowledgment
This article is part of a scientific writing lecture assignment. No funds received during the writing process. We thank our colleagues from Ministry Of Health who provided insight and expertise that assisted the research. We also thank Mr. Wachyu Sulistia디 for assistance and comments that greatly improved the manuscript.

References


Indonesia. 2012. Indonesia Demographic and Health Survey.


28


UNICEF. 2015. For every child, a fair chance : the promise of equity. UNICEF. Retrieved from https://www.mendeley.com/research-papers/fair-chance-every-child-1/?utm_source=desktop&utm_medium=1.17.8&utm_campaign=open_catalog&userDocumentId=%7Bbb2b2080-acc7-330c-b7b9-b21b6377bd91%7D

The Effect of Consumption Dates Extract Against The Duration First Stage Of Active Phase I Among Intranatal Woman in BPM Ny.F

1Siswi Wulandari*, 2Farida Hidayati, 3Eva Dwi Ramayanti
1,2,3 Faculty Of Health Sciences Universitas Kadiiri
*E-mail: wulandarisiswi@gmail.com

Abstract
Childbirth is a physiological thing that will happen among pregnant women. An adequate intake of food and drink is very important for the mothers to supply energy, to avoid tiredness also dehydration and to make the mothers and their babies feel comfort. Beside that, good intake of nutritious food can make contraction and childbirth process will be more efficient. Aim of this research is to know the effectiveness of giving dates extract which have fructose toward the duration first stage of Active Phase I among intranatal woman in BPM Ny.F. The research design was quasi eksperiment by using post-test design. The population are all of the childbirth mothers in working area of BPM Ny.F. By using accidental sampling technique, it was obtained 14 respondents. The istruments used observation and partograph sheet, and then the data were analyzed by Mann Withney Test. The result of this research shows that there is effectiveness of giving dates extract toward primigravida mothers with significance value (2-tailed) 0.02 < 0.05. It means Ho is denied that there is effectiveness between consuming dates extract among primigravida mothers among primigravida mothers. Based on the result of this research, it is expected that childbirth mothers can ful fill their nutrient needs and it can be supported by consuming sweet drink. One of them is to drink dates extract which gives much benefit.

Keywords: First Stage Active Phase, dates extract, fructose

Introduction
Childbirth is a physiological thing that will happen to any pregnant woman. The process of discharge result of conception (fetus, placenta, and amniotic) which has been quite a month or able to live outside the uterus through the birth or through other avenues with the help or no help (Manuaba, 2010). During labor, aerobic or anaerobic metabolism of carbohydrates will increase continuously. The increase was largely caused by anxiety and muscle activity of the body. This is reflected by the existence of a rise in body temperature, heart rate, breathing, cardiac output and loss of fluids. The increase in cardiac output and loss of renal function will affect the fluid, so that the necessary attention and action to prevent the occurrence of dehydration (Rohani et al, 2011).

Oral intake of food and drink is urgently needed by the mother in labor to power, avoid fatigue that result in dehydration, as well as to ensure the well-being of the mother and the fetus. In addition, the intake of nutrients makes the entire process of childbirth and the contractions are more efficient (Soegeng, 2004). Doctor Muhammad An-Nasimi in book of Ath-Tibb An-Nabawy Wal Ilmil, tell about of surah Maryam 23-25 verses in the quran in medicine namely pregnant women who will give birth urgently needs food and drinks rich in sugar elements. This is because of the large number of contractions of the muscles of the uterus when it will issue a first baby, it takes a long time. The content of sugar and vitamin B1 is helpful to control the rate of motion of the uterus and add time sistole heart. Both of these elements are contained in the date palm, much of the content of sugar in dates is highly recommended for consumption by pregnant women until postpartum (Cahyo, 2011).

On Dates specifically mentioned in the Quran as a good food for consumption. Dates are also called fruit of the best that ever was and remains one of healthy foods and maintain the health of the former prophets (Cahyo, 2011). Since then the fruit of the date palm is believed to
be the best food and very efficacious medicine, especially for expectant mothers to give birth because in the desert there is no source of energy other than the dates.

On the mother’s nutrition intake in the form of liquid delivery of badly needed such as sari intake dates. Content of glucose that is in essence dates quickly absorbed in the body. One of the simple carbohydrates content contained in the pollen of dates is an existing fructose in the blood vessels. So it’s easy to be burned by the body and is converted into energy by the time mothers are experiencing contraction.

Beside now in granting maternity mother of midwifery care in General provide a liquid nutrient intake in the form of sugar water and other sources of energy. While the content of sugar water is still not enough to meet the needs of the mother at the time of mengejan. In this study, will do research on the Effect of Consumption Dates Extract Against The Duration First Stage Of Active Phase I Among Intranatal Woman in BPM Ny.F

**Method**

This research is a quasi experimental study with One Group Post Test Design. This research is giving a test, after it, then observe the respondent.

The population is all intranatal woman in BPM Ny.F. The sample is a part of intranatal woman are in BPM Ny.F. The sampling technique uses accidental sampling technique.

The independent variables is the dates extract and the dependent variable is duration first stage of active phase I.

This research was conducted in BPM Ny.F, whereas this study was conducted in April-August 2017.

Ethical clearance process:

a. Giving informed consent

b. Giving dates extract as much as 83 ml dissolved in 120 cc of water is given once every 2 hours.

c. Observe with intranatal woman who have first stage of active phase I.

d. Observe with intranatal woman who have first stage of active phase I up to labor with partograf sheet.

To determine the effect of dates extract consumption against The Duration First Stage Of Active Phase I Among Intranatal Woman of postpartum woman are using Mann Whitney test with an error level of 5%. Interpretation of the results of analysis, if the value of the test statistic > table value or values obtained level ρ <α with α = 0.05 significance level.

**Results**

<table>
<thead>
<tr>
<th>Tabel 1</th>
<th>Frequency Distribution Characteristics of Respondents in BPM Ny.F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>&lt; &lt;20 years old</td>
</tr>
<tr>
<td></td>
<td>20 – 35 years old</td>
</tr>
<tr>
<td></td>
<td>&gt; 35 years old</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Educational</td>
</tr>
</tbody>
</table>

31
background

<table>
<thead>
<tr>
<th>Background</th>
<th>Frequency</th>
<th>Presentation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school-junior high school</td>
<td>4</td>
<td>25,0</td>
</tr>
<tr>
<td>High school</td>
<td>12</td>
<td>75,0</td>
</tr>
<tr>
<td>College</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job</th>
<th>Frequency</th>
<th>Presentation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife</td>
<td>10</td>
<td>62,5</td>
</tr>
<tr>
<td>Enterpreneur</td>
<td>6</td>
<td>37,5</td>
</tr>
<tr>
<td>Government Employees</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

(source: Primary data 2016)

Tabel 2

Frequency Distribution of first stage duration of active phase I Before and after Consuming dates extract in BPM Ny.F

<table>
<thead>
<tr>
<th>First stage duration of active phase I</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Fast</td>
<td>1</td>
<td>6,25</td>
</tr>
<tr>
<td>Normal</td>
<td>14</td>
<td>87,5</td>
</tr>
<tr>
<td>Slow</td>
<td>1</td>
<td>6,25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

| Sig (2-tailed) | 0.02 | α 0.05 |

(source: Primary data 2016)

Based on table 3 that entirely of respondent before consuming dates extract are 14 peoples (87.5%) have normal duration of first stage and after consumption that have fast duration of first stage and no one have slow duration of first stage. Based on α = 0.05 retrieved ρ value = 0.02 so ρ value α H0 defined < rejected H1 is accepted.

Discussion

Pregnant women who will give birth urgently needs food and drinks rich in sugar elements. This is because of the large number of contractions of the muscles of the uterus when it will issue a first baby, it takes a long time. The content of sugar and vitamin B1 is helpful to control the rate of motion of the uterus and add time sistole heart. Both of these elements are
contained in the date palm, much of the content of sugar in dates is highly recommended for consumption by pregnant women until nifasnya (Cahyo, 2011).

The content of sugar contained in the average dates will be absorbed in the body runs out of tempo with 45-60 minutes. Most varieties of dates contain a type of glucose fructose (Suyanti, 2010).

Fructose in the blood is easy to digest and is burned by the body. Fructose is converted into glucose quickly. So it is directly absorbed by the digestive organs and sent by the body. Especially the central organs like brain cells, nerve and red blood cells. Fructose will affect cellulose substances together to evoke the Peristaltic movement.

Based on the theory of maternal maternity conditions were given cider intake dates experienced phase faster because it contains vitamin B1 that is very helpful for controlling the rate of motion of the uterus and add time sistole heart.

Conclusion
All respondents before consuming dates extract is have normal duration of first stage. Almost all respondents after consuming dates extract is have normal and fast duration and not have slow duration. There is a effect of consumption dates extract against The Duration First Stage Of Active Phase I Among Intranatal Woman in BPM Ny.F

Acknowledgment
In the preparation of this research, researcher get a lot of guidance and assistance from various parties for that in this occasion. So we say thanks to supervisor, respondents, and all those who have assisted in completing this research.

References
Manuaba, I.B.G.Prof. dr. SpOG (K), dkk. (2010). Ilmu kebidanan penyakit kandungan, dan KB, edisi 2. Jakarta : EGC.
Decision Making Patterns of Baduy Dalam Community in Referring to the Cases of Maternal and Neonatal Emergencies

1Yayah Rokayah *, 2Rery Kurniawati D.I, 3Ayi Tansah
1,2,3Poltekkes Kemenkes Banten Department of Midwifery.
*Email: yah.chikal@gmail.com

Abstract
The pattern of decision-making was not a simple matter because many factors involved. Baduy Dalam society is keeping the tradition and difficult to receive health program. Pregnancy and childbirth still used traditional ways. It caused by the people of Baduy Dalam still adhered strongly to their culture. The objective of the research was to describe the pattern of decision making of Baduy Dalam when referring to the case of maternal emergency to the hospital. The method is qualitative used, the subject was the mother who had experienced complications during pregnancy and maternity, data collection through interview and content analysis. The results of mother perception of maternal emergency cases was normal and destiny that must be accepted. Emergency cases both in pregnancy and childbirth were usually self-medicated according to their beliefs, with the help of paraji, drinking a potion (panglay). If it was unsuccessful, the family asked a community leader to call the midwife or take the patient to a midwife's practice. In Baduy Dalam there was no means of health services because it was against the existing customary rules. Suggestion for Health Department, the reach health service at that place without eliminating the characteristic of Baduy culture.

Keywords: Emergency, Maternal, Baduy Dalam.

Introduction
Maternal emergency is closely related to maternal mortality (maternal death). Maternal deaths are deaths of women resulting from pregnancy, childbirth or death within 42 days of the end of pregnancy regardless of age as a complication of childbirth or Nifas, with related causes or aggravated by pregnancy but not accident. Measures of maternal mortality rates in addition to being used as health indicators, are also used as indicators of people's welfare or the quality of human development. Nationally maternal mortality in Indonesia according to SDKI in 2012 is still high that is 359 / 100,000 KH. The MDGs target in 2015 of 102 / 100,000 KH is not achieved for various reasons. While Maternal mortality in Banten province 189 / 100,000 KH. And the number of maternal deaths in Lebak Regency that is 47 people from 18,360 mothers who gave birth.

The high of maternal mortality has prompted the government with relevant agencies to implement programs that can reduce maternal mortality. The government established a village midwife placement policy, with the primary objective of improving the quality and equity of antenatal care in order to reduce maternal mortality, infant mortality rate, and to contribute to raising public awareness in healthy and clean living behavior. The high rate of maternal mortality is caused by 3 factors: 1) late in recognizing the alarm, 2) late in making decisions, 3) late in the health facility in providing relief. Based on Lutuamury's research, states that the maternal mortality rate is one of them caused by the delay in referring pregnant women, maternal and postpartum patients to the hospital. The results of Rodhiyah's research found that 50% of referring measures were performed incorrectly. These results indicate a delay phenomenon in referring pregnant women, maternity and childbirth to the hospital.

Decision making pattern of Baduy Dalam community in referring to the cases of maternal and neonatal emergencies to the hospital is a complex description and should involve several stages that is understanding of the problem, alternative searching, alternative evaluation.
and finally deciding whether or not to refer to the patient's condition. Decision-making is not an easy thing because many factors that support decision-making include economic factors, biological, psychological and socio-cultural.

Baduy dalam society is a very difficult society to accept a variety of influences from one of them about the health program of Maternal and Child Health, because there is still a tradition that always done by Baduy dalam society, especially about pregnancy care and labor still use traditional power, paraji at that place by using herb, Spices, and mantras. This is due to the people of Baduy Dalam still adheres to the culture derived by the ancestors. The Baduy Society assumes that pregnancy and childbirth are natural or natural phenomena that do not require special attention all based on the will of God. So feel no need for health inspection.

Based on preliminary study, from midwife of Kanekes village in 2012 there is case of mother giving birth which is assisted by dukun having retensio placenta, the case do not directly summon the midwife case is handled first in accordance with trust and culture applying in society of Baduy Dalam. Finally, the midwife can not handle because the placenta has decomposed the infection, so the midwife advised to be referred, when referring to the midwife to find obstacles because it must go through a very tough process because the decision to refer must have permission from community leaders. The purpose of this research is to describe the pattern of decision making of Baduy In society when referring the case of maternal emergency to the hospital.

Method
Qualitative Descriptive will be presented in this research method by phenomenological approach, Research Design will be used in this research is Restropective Method. Restropective is an observation which is done on a case that has happened before. Selection of informants in this study is conducted by using non probability sampling technique (non probability samples) The main informants are: maternal mothers who have experienced emergency cases Informants secondary to community leaders and village midwives. Data leveraging techniques conducted with in-depth interviews (Indepth interview). Data analysis using Content Analysis (Content analysis).

Result
The main group of informants were mothers who during the delivery of complications and emergency, the age of respondents ranged from 20 to 26 years with the number of parity 1 to 3. While the secondary informant group consisted of local village midwives and community leaders. Supporting age of respondents ranged from 43 to 45 years.

The society of Baduy in considering the case of the gravity experienced is the usual thing. They are not worried and afraid if there is a problem or complication in their pregnancy and childbirth because it is already a destiny or a way of life. It is caused because the people of Baduy Dalam embrace beliefs and customs are very firm so it is very difficult to accept influence or input from outside except to people who they already believe and have obtained permission from the leader of local adat. Other reasons they are difficult to accept input and alienate themselves to avoid negative influences of the modern world. According to Asep K (2010), it is said that the people of Baduy Dalam close themselves from the outside environment in order to withhold too freely Baduy society can adopt the modern lifestyle, and the people of Baduy Dalam strongly believe in the curse of the creator. Mother attitude on the cases of maternal and neonatal emergency.

If it case happen in pregnancy and childbirth, the family usually perform self-medication according to the belief, if not yet addressed then request assistance to paraji, dukun medication and community leaders by way of given water jampe and panglay. If the steps / steps have not been successful until 2 or 3 days then they will then call the midwife with permission from community leaders. This is because the Baduy Dalam community still holds the customary law that exists because Baduy Dalam still believes Paraji’s role other than as a relative of paraji is believed to be a person who can cure or give spells if there are problems during pregnancy and childbirth. According to research Salamah T (2011), stated that the
Baduy community still hold firm adat rules that exist as in overcoming problems that occur at the time of birth handling should be done according to their custom.

Discussion

In the society of Baduy Dalam there is no means of health services because it is not allowed by existing customary rules. This is due to the existing norms of the Baduy Dalam society forbidding the existence of modern buildings, with the assumption that incoming outer culture will affect the customary law for the sake of their tribal salvation and existence. According to Djoko's research, H (1999), undertaken by Dani that the geographic factors that are difficult to reach, the very remote dwelling place of health services will affect access to health services.

In an unresolved case of neonatal maternal emergency in baduy dalam. Adat leaders or community leaders allow their citizens to conduct checks to the midwife if needed, and there is no coercion element to perform the examination to the midwife. They require examination or assistance provided by the midwife should be done at Midwife's home Ros and as much as possible not taken to the hospital in Rangkasbitung. This is so that mothers give birth does not have to violate the customs by boarding a vehicle. This is because 10 years behind the leader of Baduy In society has not been able to receive health workers to provide health services, especially in handling problems that occur in pregnancy and childbirth because it is against the existing custom rules, but along with the running time the village midwife held a continuous approach To community leaders. On the contrary community leaders also often come to the village midwife to discuss about health problems that occurred in the community of Baduy Dalam, finally community leaders began receive services provided by the midwife.

Decision making patterns of baduy dalam community when conducting referral in emergency cases in pregnancy and childbirth is to seek help from local paraji at that place, if not successful then they will seek the help of shamans and community leaders. However, if the problem is not handled, usually a few days later call the midwife but must be with the consent of community leaders. This happens because according to Baduy people In the rule is done because it is descended from the ancestors. They are very convinced by doing the ritual all the problems that occur during pregnancy and childbirth can be handled properly, if not handled it is a fate. According to them all the behaviors performed by humans on earth must be accountable both in the world and in the Hereafter and the bad behavior will return to the person concerned. According to research of DJoko H (1999), it is said that in addition to geographical factors in decision making to immediately bring the patient to the health care that is still there are traditions and norms that hinder the family to immediately take decisions in seeking help to health personnel.

Conclusion

There are four conclusion, which are:

1. Characteristics of Respondents
   
   The main informants in the study are the mothers who at the time of their complications and emergency problems come from Baduy Dalam. Age of respondents 20 to 26 years old with a parity of 1 to 3 persons. Second informant is village midwife of Baduy Dalam community figure. Age ranges from 43 to 45 years.

2. Perceptions of Baduy society In the case of maternal and neonatal emergency
   
   According to the Baduy community In the case of emergency is an ordinary thing, they do not feel worried and afraid if there is a problem or complication. Hhal is considered destiny or way of life.

3. Mother attitude on the cases of maternal and neonatal emergency
   
   If there is a problem in pregnancy and child birth of Baduy society In doing self-treatment according to belief. If they have not handled themselves they ask for assistance to paraji, dukun medication and community leaders by giving water jampe.
and panglay. If the steps have not been successful within 2 to 3 days then after the community leaders are approved then they will call the midwife.

4. Affordability of health facilities.
   In Baduy Dalam there is no means of health care because it is not allowed by custom rules

5. Community support
   Indigenous leaders or community leaders allow their citizens to conduct checks with the midwife if it is needed, and there is no compulsion to examine to the midwife.

6. Decision-Making Patterns to the cases maternal and Neonatal Emergency
   Asking for help from local paraji at that place, if not successful then they will seek the help of medicinal healers and community leaders. However, if the problem is not addressed, usually a few days later call the midwife but must be with the consent of community leaders.

Reference

Dinkes Kab. Lebak. 2011. Laporan bulanan program KIA.
Diah, J. 2006. pengambilan keputusan Pada Ibu grande Multipara, Tesis Fakultas Ilmu Keperawatan UI.
Kurnia A & dkk2010.Saatnya Baduy Bicara. Bumi Aksara,
Poedji, R. Strategi Pendekatan resiko sebagai Dasar Peningkatan Mutu Pelayanan. POGI VIII. Bandung
Thomasita S. 2012. Aspek Sosial Budaya mempengaruhi kematian ibu pada masa kehamilan dan kelahiran.
Influences of Dates Consumption on Hemoglobin Concentration of Pregnant Woman at BPM Siti Fatimah Cimahi

Sri Yuniarti*, Maulidwina Bethasari
1Department of Midwifery, School of Health Sciences Jenderal Achmad Yani
2Institute of Technology Bandung, Bandung, Indonesia
*Email: sriyuniartispi@yahoo.com

Abstract
Iron deficiency anemia (IDA) is one of the most serious public health issues in the world. In Indonesia, anemia still be one of four unsolved nutrition problem. One of the indications of anemia is low concentration of hemoglobin (Hb). Overcoming IDA can be done by consuming iron supplement, and iron-rich food. One of the iron-rich food is dates. This study aims to know influences of dates consumption on Hb concentration of pregnant woman. Method used in this research is quasi experimental design with test before and after treatment. The sample group consists of 17 first trimester pregnant women. Subjects are selected by purposive random sampling technique. Hb was determined using Sahli’s haemoglobinometer. Obtained Hb data was analyzed using univariate and bivariate with T student dependent as statistic assay. Result of the assays are average respondents before treatment are affected by moderate anemia (7.02 mg %) and average respondents after treatment are also affected by mild anemia (10.97 mg %). Dates consumption resulted in significant increment of Hb concentration (p-Value 0.01). Health workers can suggest dates consumption to pregnant women to increase Hb concentration and eliminate nausea caused by Iron supplement.

Key words: Dates, hemoglobin, quasi experimental design

Introduction
IDA affect 20% - 89 % pregnant woman in the world with Hb below 11 gr % as indicator. In Indonesia, prevalence of IDA in pregnancy are 3.8% at first trimester, 13.6 % at second trimester, and 24.8 % at third trimester (Manuaba, 1998). Overall, the prevention and successful treatment for iron deficiency anemia remains woefully insufficient worldwide, especially among underprivileged women and children (Jeffery,2013). IDA in pregnancy in underdeveloped countries should be categorized as national problem due to the causes which is the low level of social welfare and potentially cause varying degrees of deficiency, from low iron stores to early iron deficiency and IDA, these conditions are dangerous to both baby and mother (Apil et al, 2015). IDA on pregnancy could cause With porphyrin, iron will form a heme which will bind to protein resulting hemoglobin, an iron-containing oxygen-transport metalloprotein in red blood cells of all vertebrates (Hoffbrand, 2005). IDA on pregnancy could cause miscarriage, partus prematurus, inersia uteri and long partus (weak mother), atonia uterine and haemorrhage (Manuaba, 2001).

Since iron supplement consumption as IDA treatment could cause side effects (nausea, constipation, diarrhea, and balck stool) that need to be avoided by pregnant women due to its inconvenience and danger (IQWiG, 2014), alternative treatment such as Iron-rich food need to be optimized and introduced by health workers. Efficacy of iron rich food such as dates to treat IDA has not investigated profoundly. Seven pieces of dates (100gr) consist 3 – 13.7 mg of iron which theoretically can provide 10 - 45.7 % of iron demand in pregnancy (WHO, 2012). Based on facts above, this research aims to study influence of dates on Hb concentration in pregnant women.

Method
Permission to conduct research at BPM Siti Fatimah Cimahi was submitted to STIKes A.Yani Cimahi by concerning ethics listed in table 1. The lowest threshold value for hemoglobin (Hb) in pregnant women is <11 g/dL during the 1st and 3rd trimesters (Apil et al., 2015). Subjects are selected by using purposive sampling technique. Size of sample needed in simple research is between 10 – 20 respondent (Sugiyono, 2017). With criteria such as anemia (HB < 11 mg %), does not have other complication or disease, and not in IDA treatment. Population in this research are pregnant women in first trimester with anemia (Hb < 11 mg %) in BPM Siti Fatimah Cimahi, March 2015. Based on observation in January until February 2015, there are 23 pregnant women with anemia in first trimester.

Table 1. Ethics Of Conducting Research
(Comisi Nasional Etik Penelitian Departemen Kesehatan RI, 2004)

<table>
<thead>
<tr>
<th>No.</th>
<th>Ethics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Informed consent contain information of dates that can increase Hb concentration.</td>
</tr>
<tr>
<td>2.</td>
<td>Respondents treated appropriately and have right to decide whether accept or not to become research subject without any constraint or sanctions (right to self determination)</td>
</tr>
<tr>
<td>3.</td>
<td>Each respondent was given same treatment (justice)</td>
</tr>
<tr>
<td>4.</td>
<td>Treatment given is beneficial for patients (beneficence)</td>
</tr>
<tr>
<td>5.</td>
<td>Researcher did not publish name (anonymity) and conceal information of respondents (confidentiality).(right of privacy)</td>
</tr>
<tr>
<td>6.</td>
<td>Respondent not treated as tool, but treated as human and also given protection and treatment which is beneficial for respondents (Non-maleficent)</td>
</tr>
</tbody>
</table>

Research design used is quasi experimental design with test before and after treatment. Every subject was given consultation about benefit of dates on increasing Hb and daily 7 pieces of dates (Phoenix dactylifera) (100 gr) for 4 days as treatments. Hb concentration of each subject was determined using Sahli’s Haemoglobinometer before and after treatments. Average HB concentration of subjects before and after treatments are categorized into not anemia (Hb 11 gr %), mild anemia (Hb 9-10 gr %), moderate anemia (Hb 7 – 8 gr %), or severe anemia (Hb < 7 gr %)19. Data of HB concentration obtained was analysed by univariate and bivariate methods in order to determine significance of HB concentration change.

Statistic assay that conducted in this research is paired sample T-test. The purpose of using the assay is to know the difference between 2 mean of Hb Concentration of pregnant woman before and after treatment with condition if P-value < 0.05 null hypothesis (Ho) is rejected and if P-value is >0.05 null hypothesis (Ho) is accepted.

Results
Result of univariate analysis is presented on table 2. Average Hb concentration before treatment indicate moderate anemia (7.02 mg %) and average Hb concentration after treatment indicate mild anemia (10.97 mg %).

Table 2. Data of respondents

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Mean</th>
<th>SD</th>
<th>(Min-Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>22,41</td>
<td>8,280</td>
<td>18 – 30</td>
</tr>
<tr>
<td>Parity</td>
<td>1,76</td>
<td>0,903</td>
<td>1 – 4</td>
</tr>
<tr>
<td>Weight</td>
<td>48,82</td>
<td>7,876</td>
<td>38 – 62</td>
</tr>
<tr>
<td>HB before treatment</td>
<td>7,02</td>
<td>0,699</td>
<td>6 – 8</td>
</tr>
<tr>
<td>HB after treatment</td>
<td>10,97</td>
<td>0,945</td>
<td>8 - 10</td>
</tr>
</tbody>
</table>
Bivariate analysis result is presented in table 3. P-value resulted from T student assay is 0.01 which means increment of average Hb concentration before and after treatment is significant. This result represent positive influence of dates consumption by pregnant woman on their Hb concentration.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Before treatment</th>
<th>After treatment</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Hb (%)</td>
<td>7.02</td>
<td>0.699</td>
<td>10.97</td>
<td>0.945</td>
</tr>
</tbody>
</table>

**Discussion**

From the research data, Hb concentration of pregnant women before treatment indicate moderate anemia (7.02 mg %). This condition is related to blood accretion or hydraemia or hypervolemia which is normal in pregnancy. The accretion stated from 10th week of pregnancy until its maximum in between 32th and 36th week. In IDA, increment of blood cells is not proportional with increment of plasma resulting in blood dilution. Portion of blood contents are 30% plasma, 18% blood cells, and 19% hemoglobin (Wiknjosastro, 2002). Physiologically, blood dilution will decrease heart workload that usually increase during pregnancy.

After consumption of 7 dates daily for four days, Hb concentration of sample groups increase and indicate mild anemia (10.9mg %). This increment of Hb concentration is related to consumption of dates, one of iron-rich food. Despite its iron content, dates also contain other nutrition needed by pregnant woman and can support blood generation such as protein (1.8 - 2 %), fiber (2 - 4%), vitamins, glucose (5-50 %), biotin, niacin, folic acid, and minerals such as calcium, sodium, and potassium (Jahromi et al, 2007). Carbohydrate and fat in dates can support Hb synthesis by forming Succinyl-CoA which with glycine through porphyrinogen pathway will form protoporphyrin (Muray et al, 2003 & Sotolu et al, 2012).

Previous clinical and preclinical researches also resulted in positive effect. Combination of dates that rich in glucose, Ca, Fe, Zn, Cu, P and niacin, with palmyn that rich in vitamin A, and coconut that rich in Na and K can improve Hb concentration of anemia patient (Barta, 2008). A pre-clinical assay of administration of 60 - 120 mg/Kg dates extract resulted in increment of iron concentration on normal rat (Pravitars, 2009). Zen also reported that 100% dates extract administration can improve Hb concentration of 50 % of male rat wistar strain population that given low-iron food (Zen, et al, 2013).

Treatment of IDA in pregnant women are oral therapy of iron supplement (60 mg/day) which can increase Hb concentration as much as 1 gr%/month. Nowadays, national program suggest to use combination of 60 mg of iron and 50 ng of folic acid as prophylaxis dose for anemia (Saifudin, 2002). Other treatment is parenteral therapy which is only needed when the patient cannot tolerate oral iron supplement, have malabsorption condition, digestive tract disease, or in third trimester of pregnancy (Winknosastro, 2002). Administration of 1000 mg ferrum dextran (20 mg) intravenous or 2 x 10 ml/ IM at gluteus can increase Hb more rapidly, 2 gr%/month (Manuaba, 2001).

Although pharmacological treatments of IDA resulted in higher increment than side therapy such as iron rich food consumption, they still have weakness such as adverse effect of iron supplement that needed to be prevented by pregnant woman and inconvenience of parenteral therapy. Beside the convenience of therapy, dates consumption also provide phytochemical substance such as natural salicylate in low dose. Salicylate known as material for aspirin, a pain-killer and fever drug. Therefore, the experts expect low dose of salicylic in dates continually can ease headache. Dates also contain potuchsin hormone that can shrink blood vessel in uterus to prevent bleeding. Beside potuchsin and salicylate, dates also contain phenol and carotene as antioxidant. High potassium content in dates can support potassium...
needed by neuron and give neuron stimuli. Therefore, consumption of dates can increase intelligence and prevent memory loss. These effect is beneficial for the fetus. Other phytochemicals contained in dates is oxytocin which can assist lactation and labor (Saryono et al, 2016).

Theoretical amount of iron provided by daily consumption of 100g dates (3-13.7 mg) is still inadequate to fully support iron demand of pregnant women which is 20-30 mg a day (WHO, 2012). Hence, final Hb concentration is still in mild anemia category. Hb concentration of subjects can be improved to reach concentration of Hb >11% by prolong the treatment duration and increase the amount of daily dates consumed.

Conclusion
IDA in pregnancy can lead to serious maternal and fetal complications. Consumption of iron-rich food such as dates can significantly increase Hb concentration of 1st trimester pregnant women with moderate anemia. This treatment has potential to be used as treatment and prevention of IDA in pregnancy. Although the amount of iron provided by dates is not as much as iron supplement, dates can provide other nutrients needed for blood generation and free of iron supplement adverse effect which may harm mother and child. Health practitioner can recommend dates as alternative therapy for IDA in pregnancies. For further research, optimization of species, and plantation of dates can be done to maximize iron contained. Other aspects needed to be optimized are daily amount and served form of dates consumed to maximize amount of iron absorbed. Further research of Daily consumption as prevention of IDA can be beneficial.

References
Institute for Quality and Efficiency in Health Care (IQWiG). 2014 Pregnancy and birth: Do all pregnant women need to take iron supplements?. The U.S. National Library of Medicine, US.

Barh, D., Mazumdar, B.C. 2008. Comparative Nutritive Values of Palm Saps Before and after Their Partial Fermentation and Effective Use of Wild Date (Phoenix sylvestris Roxb.)


The Effect of Perineum Lacerations and Clinical Data towards the Functions of Sexual Post Partum Mother in Cimahi City

1Dini Marlina*, 2Sophia
1,2 Midwifery Department Stikes Jenderal Achmad Yani Cimahi
*Email: dinimarliana07@gmail.com

Abstract
There are many research discuss about the impact of labor towards women's sexual life which focuses on the psychological short-term changes in postpartum mothers. Apart from perineum lacerations, contraceptives and breastfeeding status also have an effect on sexual function. Hormonal contraceptives are informed having an effect on the intention to have sexual intercourse, as well as breastfeeding.

The purpose of the research is to determine the effect of perineum laceration and clinical data on the sexual function of postpartum mothers. The result, most of respondents (76%) have poor sexual function, 71.5% have perineum laceration, almost all respondents (83.8%) used hormonal contraceptives 85.8% and breastfeeding. There is an effect between perineum laceration, the use of contraceptives and breastfeeding status on the sexual function of the Postpartum Mother (p <0.05). The contraceptive device (POR 23.259) is the dominant factor that has an effect on the poor sexual function.

Key words: Perineum laceration, contraceptives, breastfeeding status, sexual function.

Introduction
Convenient and satisfying sexual intercourse is an important component in marriage relationships. Frequency of intercourse is depended on the woman condition. The less frequent of sexual intercourse in couples, the more unhealthy of the marriage. The frequency of intercourse to non-pregnant women typically ranges from 2-5x / week (Harahap, 2010). The activity of sexual after laboring is influenced by several factors, both psychical and psychological. One of the factors is perineum laceration due to vaginal delivery (Manuaba, 2008).

Many women experience perineal pain or discomfort after childbirth that may persist for a variable time, depending on the woman and the nature of the pain. This pain or discomfort can impair a woman's normal sexual functioning. Sexual functioning has been shown to be best for women with an intact perineum or no perineal tears, but trauma to the perineum during the birthing process is a common, natural complication.

Routinely asking postpartum mothers about perineal trauma resulting from labor should help prevent adverse effects from being overlooked. Some health care professionals may mistake postpartum dyspareunia as a topic addressed mainly by obstetricians, but many women do not resume sexual activity until after their six-week postpartum visit.

A research in Indonesia which involving postpartum mother shows that as many as 20% of mother has little or no excitement to have sexual intercourse for up to 3 months postpartum, and as many as 21% of women who first laboring claimed to have no Function for having sexual intercourse (Admin, 2011). Another research found as many as 20% of women who first laboring need 6 months to feel physically comfortable when having sexual intercourse with an average time of about 3 months (Suryati, 2011).

According to the research conducted by Puji (2009) at Edelweiss Clinic Cipto Mangunkusumo Hospital during May to July 2010, episiotomy has an influence on health problems.
There are as many as 38.2% have libido disorders, 56.5% have orgasm disorders and 70.9% have experienced pain problems due to perineum stitches.

According to the research conducted by Rizzawati in 2011, obtained that as many as 83.3% of postpartum mothers have no intention to have sexual intercourse. The reason is because the mother is still traumatized by the experience of labor, either the process of laboring or all the actions of laboring including the perineum laceration, so the mother feels uncomfortable to restart sexual relations (Rizzawati, 2011).

Apart from perineum lacerations, contraceptives and breastfeeding status also have an effect on sexual function. Hormonal contraceptives are informed having an effect on the intention of the postpartum mother to have sexual intercourse (Leal, 2010). The use of contraceptives, especially hormonal contraceptives has an effect on sexual function.

Another research has shown that women who breastfed rather than those who did not have decreased sexually, especially sexual function. Several factors that influence sexual during breastfeeding are psychosocial and hormonal factors (Lamarre, 2003).

Research shows that contraception method is a significant factor to FSFI score especially on hormonal contraception. Hormonal contraceptive is associated with the low of FSFI score and Functions score and stimulus compared with no hormonal contraceptives (Wallwiener et al, 2010).

Method
The research type used was an analytical survey design with cross-sectional approach, used quasi-observational design. The sample in this research was taken by using stratified random sampling technique in postpartum mother 3-6 months residing in Cimahi City as many as 401 respondents. Chi-square test was employed to figure out the bivariate correlation between perineum laceration, contraceptive, and breastfeeding as independent variable and sexual drive as dependent variable.

Result
A total of 401 respondents contribute this study. (masukkan data distribusi demografi)

1. Bivariat Analysis

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Sexual Desire</th>
<th></th>
<th></th>
<th>Total</th>
<th>p* Value</th>
<th>POR (IK 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor (n=305)</td>
<td>Good (n=96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perineum Lacerations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>254</td>
<td>88.8</td>
<td>32</td>
<td>11.2</td>
<td>286</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>51</td>
<td>43.5</td>
<td>64</td>
<td>56.5</td>
<td>115</td>
<td>100</td>
</tr>
<tr>
<td>Hormonal Contraceptives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hormonal</td>
<td>289</td>
<td>86.3</td>
<td>46</td>
<td>13.7</td>
<td>335</td>
<td>100</td>
</tr>
<tr>
<td>Non Hormonal</td>
<td>16</td>
<td>23.1</td>
<td>50</td>
<td>76.9</td>
<td>66</td>
<td>100</td>
</tr>
</tbody>
</table>

(p* Value: 0.000, POR (IK 95%): 10.16 (6.031-17.116), 20.952 (10.872-50.338), 11.667)
The bivariate analysis showed that perineal laceration, contraceptive usage and breastfeeding shows significantly related to sexual desire p <0.05. Table 1 above shows that perineal laceration is 10 times greater risk of poor sexual desire compared to mothers without perineal lacerations. Respondents using hormonal contraceptives had a 20.9 times greater risk of having poor sexual desire compared with non-hormonal contraceptives. Breastfeeding variables were 11.7 times more likely to have poor sexual desire than those who did not breastfeed their babies.

2. Multivariat Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Koef B</th>
<th>SE (β)</th>
<th>P*** value</th>
<th>OR (CI 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perineum Lacerations</td>
<td>2.369</td>
<td>0.355</td>
<td>0.000</td>
<td>10.685 (5.332-21.507)</td>
</tr>
<tr>
<td>Hormonal contraceptive</td>
<td>3.157</td>
<td>0.525</td>
<td>0.000</td>
<td>23.259 (10.132-53.392)</td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>2.556</td>
<td>0.522</td>
<td>0.000</td>
<td>11.655 (5.101-26.627)</td>
</tr>
</tbody>
</table>

Based on the final model shown in table 2, it is known that all the variables studied have p≤0.005. Based on the logistic regression test can be concluded that hormonal contraception is the biggest factor affecting sexual desire with the value OR = 23.259. In another meaning that postpartum women who use hormonal contraceptives have 23,259 times greater risk of having bad sexual desire compared with respondents who use non hormonal contraceptives.

Discussion

Sexual desire cannot be measured and judged from the frequency (rarely or often) sexual activities. It can be measured from the level of sexual response of women who consists of 6 domains such as: passion, stimulation, lubrication, orgasm, satisfaction and pain. Assessment of sexual response rate is done by using FSFI (Female Sexual Function Index) questionnaire which is a valid and accurate measuring instrument.

According to Saied (2012) the impact of perineal laceration will cause pain such as puncture and heat. Perineal laceration will cause pain for at least 10 days to 3 months after labor. Pain cause by perineal laceration can emotionally and sexually, may interfere with maternal sexual activity and can often lead to dyspareunia. Pain due to perineal laceration after delivery may cause perineal trauma, and occurs in 21% women who had perineal seams on spontaneous tears and 50% of women with episiotomies.

Dr Horowitz was quoted by Foxnews said that trauma due to perineal laceration can reduced the frequency of sexual intercourse, in the first year after delivery. Perineal trauma due to laceration of the birth canal also causes discomfort and pain during sexual activity (Llewellyn, 2009).
In addition to labor trauma, contraceptive methods are another factor that significantly affects sexual desire, especially in hormonal contraceptives. Hormonal contraceptives are associated with low Female Sexual Function Index (FSFI) scores and low score of desire and sexual stimulation compared non hormonal contraceptives (Wallwiener et al, 2010). Hormonal contraception is informed to have an effect on the desire of post partum mothers to engage in sexual intercourse (Leal, 2010).

Breastfeeding has also been indicated as a contributing factor to sexual dysfunction after pregnancy. Lactation causes a hypo estrogenic status as a result of increased prolactin levels, which can result in atrophic vaginitis and, consequently, dyspareunia.

The prevalence of sexual dysfunction increases not only with the type of delivery but also the level of trauma.1-3,6,7 This indicates the significance of inquiring about the patient's birthing process; however, drawing conclusions because the patient is postpartum may lead to a misdiagnosis. A study also shows a significant delay in sexual activity in breastfeeding women. Breastfeeding women have less sexual desire than women who do not breastfeed their babies. Psychosocial factors in the mother due to fatigue take care of the baby lowered the mother's sex drive. In good postpartum conditions the vagina can still be very sensitive, especially if there is vaginal atrophy due to lack of estrogen in the body increase the high decrease in sexual desire in breastfeeding mothers.

Conclusion

This research can be conclude as the sexual desire among post partum mother can be affected by Perineal laceration, hormonal contraceptive usage and breast feeding status. The prediction model showed that hormonal contraception is the biggest factor affecting sexual desire with the value, whereas post partum women who use hormonal contraceptives have approximately 23 times greater risk of having poor sexual desire compared with those who use non hormonal contraceptives.

Acknowledgment

This research supported by Kemenristek Dikti in PDP program 2016/2017.

References


Wallwiener dkk. 2010. Prevalence of Sexual Dysfunction and Impact of Contraception in Female German Medical Students. The journal sexual medicine
Toddler Nutritional Status with Child Health Service in Working Area of Puskesmas Cipadung 2015

1Siti Nur Endah*, 2Siti Rokhiyatun
1Prodi Bidan Pendidik (D4) Stikes Jenderal Achmad Yani
2Rumah Sakit Khusus Ibu dan Anak Kota Bandung
*Email: siti_nurendah@yahoo.com

Abstract
Healthy can be seen from the nutritional status, nutritional status is a measure of the state of a person's body that can be seen as a result of the consumption of food and nutrients. Nutritional status can be distinguish into poor nutritional status, less, better and more. The research is cross sectional. A proportional random sampling on children aged 1 - 5 years with total sample 97 children were taken whom mothers as respondent in the region of subdistrict Community Health Centers Cipadung Bandung. The result found that 72.2% children health care in good nutritional status based weight for age 82.5% in good status and weight for height 88.7% normal. The statistic results there is a relationship between children health care and nutritional status weight for age (p = 0.017) and nutritional status weight for height (p = 0.010). In Cipadung Community Health Centers should have a nutritional counseling service to its community, especially to people who have children under five years of age. This service must collaborate with other health care facilities such as general physicians and midwives and improve supervision of Posyandu services. Cipadung Community Health Centers have to improve the monitoring of children growth and development by means of the obligation to report the child health care activities so the quality of government program will increase.

Key words: Child health, nutritional status, service, toddler

Introduction
Children under 5 years is a very important part because this age is the foundation that shape the future, health, happiness, growth, development and learning outcomes in school children, families, communities and life in general. In addition, children are a group that is still vulnerable to health problems or disease that must be monitored to ensure they are in a good condition. The effort of child health services are expected to reduce child mortality. Grand strategy from Healthcare Department on Survival program expecting any babies and toddlers acquire basic health care plenary, serviced adequately, every infant and toddlers grow and develop optimally.6

One of the health indicators in the MDGs is nutritional status of toddler. The problem of public health considered seriously when the prevalence of toddler underweight 20.0% - 29.0% and also considered a very high prevalence when more than 30% (WHO, 2010). Toddlers were malnourished based on weight/ age at 2013 in Indonesia as much as 19.6% and in West Java as much as 15.7%. In 2013 the national prevalence of malnutrition on toddlers as much as 19.6%, which means that the problem of malnutrition on toddlers in Indonesia closer to serious level.2

Healthy influenced by two factors: behavioral factors and non-behavioral or environmental factors.4 Healthy can be seen from the nutritional status, nutritional status is a measure of the state of a person's body that can be seen as a result of the consumption of food and nutrients. Nutritional status can be distinguish into poor nutritional status, less, better and more.5 The nutritional status has complex dimensions. The factors that affect nutritional status directly are the intake of food and indirectly are healthcare service. One of the healthcare services is the healthcare for toddlers.6
Children Healthcare covers the growth monitoring with weight measurements of toddler every month which recorded at KIA/KMS book, giving high doses of vitamin A (200,000 IU and 100,000 IU), nutritious meals and counseling.

Method
The research was cross sectional. The research was conducted from February until June 2015 at Puskesmas of Cipadung in sub-district of Cibiru of Bandung City. The population is children under five years old with the number of 2,947 children and the sampling technique using proportional random with the sample as much as 97 children. Statistic test used Kai squared (X2) or Chi square with the level of significance \( \alpha = 0.05 \) and Confidence Interval (CI) of 95%. The Data collection techniques of child healthcare services were collected through interviews using a questionnaire and nutritional status data through observation by weigh and measure the height.

Result

1. Child Health Service
The research indicator/variable children healthcare services can be seen in the following table:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>88</td>
<td>90.7</td>
</tr>
<tr>
<td>Bad</td>
<td>9</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>The provision of vitamin A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>93</td>
<td>95.9</td>
</tr>
<tr>
<td>Bad</td>
<td>4</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>The provision of good nutrition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>88</td>
<td>90.7</td>
</tr>
<tr>
<td>Bad</td>
<td>9</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>Good</td>
<td>73</td>
<td>75.3</td>
</tr>
<tr>
<td>Bad</td>
<td>24</td>
<td>24.7</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: primary data
From table 2 it can be seen the percentage of indicators of children healthcare services in the highest category of good value is the indicator of giving vitamin A as much as 93 people (95.9%) while for the worst category (most unfavorable) is the indicator of counseling as much as 24 people (24.7%). The variable of children healthcare services can be seen in the following table:
Table 2. Variable Frequency Distribution of Children Healthcare

<table>
<thead>
<tr>
<th>Child health services</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>70</td>
<td>72.2</td>
</tr>
<tr>
<td>Bad</td>
<td>27</td>
<td>27.8</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: primary data

Based on Table 3 that the percentage of children healthcare services variables was included in both categories as much as 70 peoples (72.2%) while bad category as much as 27 peoples (27.8%). When viewed from the indicators of children healthcare services, the indicator of bad value is in counseling as much as 24 peoples (24.7%). Therefore, to further improve children healthcare services, Puskesmas of Cipadung should improve counseling services to the community, especially people who have a toddler.

Nutritional counseling and similar activities is basically used to guide, educate and direct the public so that they can overcome their own health problems. Counseling also aims to improve the knowledge, attitudes and behavior towards the children healthcare. Hestuningtyas and Noer say that the nutritional counseling can improve knowledge, attitude, and practice of mother in feeding the children. According to Misbakhudin, knowledge and attitudes associated with nutrition conscious behavior, therefore, through counseling of children healthcare will increase access and utilization of health services children.

Sartika researchs states that the utilization analysis of Health Nutritional Status of Toddlers program, the healthcare services are utilized by people other than Puskesmas is practicing doctor, midwife, Posyandu, poskesdes and polindes. Therefore, in improving children healthcare services, Puskesmas of Cipadung must work together with the other healthcare facilities that exist in the work area.

2. Nutritional Status of Toddler

The research results of nutritional status of toddler can be seen in the following table:

Table 3. Variable Frequency Distribution of Toddler Nutritional Status according to Standard WHO-NCHS

<table>
<thead>
<tr>
<th>The variable of toddler nutritional status</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight/Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More</td>
<td>80</td>
<td>82.5</td>
</tr>
<tr>
<td>Good</td>
<td>14</td>
<td>14.4</td>
</tr>
<tr>
<td>Less</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bad</td>
<td>3</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>Weight/Height</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>86</td>
<td>88.7</td>
</tr>
<tr>
<td>Normal</td>
<td>8</td>
<td>8.2</td>
</tr>
<tr>
<td>Thin</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Very thin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the table it can be seen that the nutritional status of children based on weight indicator than age (W/A) found that a good nutritional status as much as 80 people (82.5%) and less nutritional status as much as 14 people (14.4%). The problem of nutrition/public health seriously considered when the prevalence of malnutrition on toddler ranges from 20.0% - 29.0% and also considered a very high prevalence when more than 30.0% (WHO, 2010). When compared with the results of Riskesdas 2013 the status of malnutrition in Indonesia was 13.9% and in Puskesmas of Cipadung was 14.4%, so malnutrition status in Puskesmas Cipadung still above the national average.

When viewed from the indicator Weight/Height, it was found as much as 86 people (88.7%) normal nutrient and 3 people (3.1%) fat nutrition. The Indicator of W/H are used as screening the nutritional status of the measurement results W/A so that it can be said that the troubled toddler nutrition in Puskesmas Cipadung was 8.2% nutrition slim/ less and 3.1% fat nutrition/better. Nutritional deficiency or nutritional excess is a problem that often referred to nutrition or nutrition problems doubles, so Puskesmas of Cipadung facing nutritional problems dual malnutrition and over nutrition.

For the purposes of calculation, the statistical tests of nutritional status are modified as follows:

### Table 4. Variable Frequency Distribution of Toddler Nutritional Status (Modified)

<table>
<thead>
<tr>
<th>The variable of nutritional status</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>80</td>
<td>82.5%</td>
</tr>
<tr>
<td>Bad</td>
<td>17</td>
<td>17.5%</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>100</td>
</tr>
</tbody>
</table>

| W/H                               |               |                |
| Normal                            | 86            | 88.7%          |
| Abnormal                          | 11            | 11.3%          |
| Total                             | 97            | 100            |

Source: primary data

Based on Table 5 it can be seen that the indicator W/A as much as 80 people (82.5%) for good nutritional status, as much as 17 people (17.5%) for bad nutrition. The indicator W/H as much as 86 people (88.7%) for normal nutritional and 11 people (11.3%) for abnormal nutritional status.

3. The relationship between health service and toddler nutritional status

### Table 5. The relationship between health and toddler nutritional status Weight/ Age

<table>
<thead>
<tr>
<th>Child services</th>
<th>Nutritional status</th>
<th>P value</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Good</td>
<td>62</td>
<td>8</td>
<td>(88.6)</td>
</tr>
<tr>
<td></td>
<td>Bad</td>
<td>(11.4%)</td>
<td>0.017</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Based on W/A) based on W/H) regularity to Posyandu to monitor the growth of children that obtained healthcare services in both categories, from 97 samples was found as much as 62 peoples (88.6%) that have good nutritional status, and 8 peoples (11.4%) nutritional status is not good. While the bad child health services as much as 18 peoples (66.7%) good nutrient as much as 9 peoples (33.3%) good nutrients.

From the statistical test of Chi square or Kai square obtained P value = 0.017, so making it less rather than or equal to Alpha (α) ≤ 0.05 then there is a significant relationship between child health services and nutritional status W/A with values odds ratio of 3.8. The nutritional status W/H can be seen in the following table:

<table>
<thead>
<tr>
<th>Child services</th>
<th>Nutritional status</th>
<th>P value</th>
<th>OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>good</td>
<td>Normal</td>
<td>66</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(94.3)</td>
<td>(5.7%)</td>
<td>0.010</td>
</tr>
<tr>
<td>Bad</td>
<td>abnormal</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>(74.1)</td>
<td>(25.9%)</td>
<td></td>
</tr>
</tbody>
</table>

Source: primary data

Based on Table 7 it can be seen that the nutritional status of toddler (based on W/H) that obtain healthcare services in both categories, from 97 samples was found as much as 66 peoples (94.3%) who had normal nutritional status, and 4 peoples (5.7 %) with a normal nutritional status. While those who obtain healthcare services are not good as much as 20 people (74.1%) with a normal nutritional status and 7 peoples (25.9%) with a normal nutritional status.

From the statistical test Chi square Kai square or obtained p value = 0.017, making it less than or equal to Alpha (α) ≤ 0.05 then there is a significant relationship between child health and nutritional status W/H with a value odds ratio of 5.7. Toddlers who obtained healthcare services in good categories and have good nutritional status as much as 62 peoples (88.6%) and those who did not get good healthcare services as much as 18 people (66.7%). The results of statistical test Chi square or Kai square obtained p value obtained chi square = 0.017, so it is smaller than the Alpha (α) ≤ 0.05, then Ho is rejected and Hα accepted that concluded there was a significant association between child health and nutritional status W/H, meaning that toddlers who receive good healthcare will likely have a good nutritional status 3.8 times compared with child who receive healthcare service unfavorable.

When viewed from children W/H who obtain good healthcare service and had normal nutritional status as much as 66 peoples (94.3%), while those who did not obtain good health care service and get a normal nutritional status as much as 20 people (74.1%). From the statistical test Chi square or Kai square obtained p value = 0.010, so it is smaller than the Alpha (α) ≤ 0.05, then Ho is rejected and Hα accepted, so it can be concluded there was a significant association between children's health and nutritional status W/H, meaning that toddler who obtained good healthcare services will likely have a normal nutritional status 5.7 times compared with children who receive good healthcare. This is in line with the research of Sartika that the rate of mother attending regularly to Posyandu to monitor the growth of children that low and can result in delays the detection of children growth disorders. In line with the research Welasasih and Wirjatmadi say that the level of attendance to Posyandu significantly associated with the occurrence of stunting in the nutritional status balita.  \[14\]
The research of Khotimah, Siregar and Mardiana that maternal nutritional knowledge and toddler eating pattern that there are very significant relationship with nutritional status, therefore, through the consulting lectures, discussions, counseling and others by the officer and Posyandu cadre’s can improve the nutritional status gizi.\textsuperscript{15}

Persagi 1999 in Supariasa, Bakri, and Fajar deliver the factors that affect nutritional status directly one of which is the intake of food, and indirectly the health service. However there is a relationship, although not directly, so that health services include monitoring the growth of children with weight measurements of children under five every month is recorded in the book KIA / KMS.

**Conclusion**
Child health services in working area of Puskesmas of Cipadung in sub district Cibiru Bandung as much as 70 peoples (72.2%) included in good categories, while as much as 27 peoples (27.8%) is still in bad category.

Nutritional status based on weight indicator rather than age (W/A) known that nutritional status more than 3 peoples (3.1%), good nutritional status as much as peoples (82.5%) and less nutritional status as much as 14 peoples (14.4%) and poor nutritional status was not found. When viewed from weight indicator rather than age (W/H) obtained the nutritional status of obese as much as 3 peoples (3.1%), normal nutritional status as much as 38.7% and underweight nutritional as much as 8 peoples (8.2%) as well as the bad underweight nutrition status also not found.

There is a significant relationship between child health services and nutritional status W/A (Pvalue = 0.017, \( \alpha \leq 0.05 \)) OR value of 3.8 and nutritional status W/H (pvalue = 0.010, \( \alpha \leq 0.05 \)) the value of OR was 5.7.

The provision of high doses of Vitamin A in February and August, nutritious meals and counseling are government programs must continue to be improved quantity and quality so that Puskesmas of Cipadung can contribute in decreasing the prevalence of malnutrition and less nutrition as expected of MDGs in 2015 was 15.5%.

**Acknowledgment**

We would like to thank our Chair Man at STIKES (Higher School of Health Sciences) Jenderal Achmad Yani Cimahi who have supported us to publish the result of this study. This research can be conducted upon the midwife at Primary Health Care of Cipadung in sub district Cibiru Bandung, and all the lecturer at STIkes Jenderal Achmad Yani Cimahi.

**References**


The Analysis of Hormonal Contraceptives Counseling Training Side Effects to Midwives in Decreasing Family Planning Drop Out in Lembang West Bandung

Lina Haryani1*, Dwi Prasetyo2, Yoni Fuadah Syukriani3, Hadyana Sukandar4, Tono Djiwantono5, Farid Husin6
1Department of Midwifery, School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia
2Dept of Pediatric, Hasan Sadikin Hospital, Faculty of Medicine, Padjadjaran University
3Dept of Forensics and Medicolegal Hasan Sadikin Hospital, Faculty of Medicine, Padjadjaran University
4,5Departement of Epidemiology and Biostatistics, Faculty of Medicine, Padjadjaran University
6Departement Obstetrics and Gynecology Hasan Sadikin General Hospital, Faculty of Medicine, Padjadjaran University
*Email: lina.mids46@gmail.com

Abstract
Hormonal contraception is the most common type of contraceptive used by family planning acceptors in Indonesia, and some people stop using the method of contraception as they fear of the side effects or health problems. Midwives have an important role in providing counseling especially regarding the side effects of hormonal contraception. One of the efforts to improve the knowledge, attitudes, and skills of the side effects of hormonal contraception is by providing training. The purpose of this counseling training is to analyze the effect of counseling training on the side effects of hormonal contraception to midwives in decreasing Family Planning drop out.

This study used a quasi experimental one group pre post test design conducted on 30 midwives in Lembang sub-district who received counseling training on side effects of hormonal contraception. Each midwife only took 10 new or former family planning clients who used hormonal contraceptive pills, 1 month and 3 month injections; data obtained from 3 months before and after training. Knowledge and attitude were measured using questionnaires. Data analysis using linear regression analysis.

The results of the research analysis showed that there was a significant improvement in midwife knowledge and attitude after training (p <0.001). Linear regression analysis showed that there was no significant effect of counseling training toward the side effects of hormonal contraceptives on Family Plan drop-out decreased.

Conclusions of this research, side effects of hormonal contraception counseling training can improve knowledge and attitude but there is no effect on decreasing Family Planning drop out.

Key words: Attitude, family planning drop out, knowledge, midwives, training.

Introduction
Indonesia is one of the four most populous countries in the world after China, India and the United States, with a population of 249 million in 2013 and by 2050 is projected to reach 366 million with the Total Fertility Rate (TFR) rising with no significant from 3 to 2.6 and CPR from 61.4% to 61.9% (Bureau, 2013; BPS, 2013; Riskesdas, 2013). This indicates that the quantity of Indonesian population is a strategic problem, controlling the number and rate of population growth is directed towards the improvement of family planning services and affordable, qualified and effective reproductive health toward the establishment of quality small families (Julianto, 2014).

The rate of contraceptive continuity used has increased from 26% (IDHS 2007) to 27% (SDKI 2012). Higher dropout rates on pill method (41%), condom (31%), and injection (25%) (BPS, 2013). The results of the study explain the main reason for discontinuing the use of a
method of contraception is the desire to conceive and the next reason is fear of side effects or health problems (Rosenberg, 1995; Huber, 2006; Samandari, 2011; Krakowiak-Redd, 2011). Pill users receive at least some information on possible side effects and what to do in case of problems (28% and 24% respectively) and urban planning participants are more informed than in rural areas (BPS, 2013) and by 2014 expected there was a decrease of contraceptive use drop to <5% (Julianto, 2014).

As a health professional, midwives play a very important role in family planning services, about 76.6% of family planning services are performed by midwives and 54.6% are performed by independent midwives (Riskesdas, 2013). Midwives have important duties in counseling and health education, not only for women, but also for families and communities. This activity should include antenatal education and parental preparation and may extend to women's health, sexual health or reproductive health and child care (MoH RI, 2017). The authority of the midwife in carrying out the practice of family planning service is arranged in Minister of Health Regulation No. 464/2010, Minister of Health Decree No 369/2007, and Minister of Health Regulation 69, 71 and circular of Minister of Health 31 and 32 year 2014 about Social Security Administrator for Health. The regulation states that one of the authority of midwives in family planning services is to provide counseling and counseling of women's reproductive health and family planning.

The skills of midwives or family planning officers in Indonesia in counseling are not widely known, although in fact research shows that client-client interaction is a sector that needs attention. This situation not only occurs in Indonesia but occurs in other developing countries, some studies show that doctors and midwives of family planning officers at Community Health Center have not done good interpersonal communication with clients and recognized counseling skills are skills that are not easily learned (Basuki, 2007). The results of the study explain that midwives' knowledge and behavior about hormonal contraception is lacking (Erbil, 2010; Dragoman, 2010).

To improve the ability of midwives in providing quality services, they are required to change behavior in education, namely skills, attitudes and behavior of midwives in dealing with contraceptive problems (Erbil, 2010). All of these efforts aim to improve midwife's performance in providing quality midwifery services (Sofyan, 2006). The most recent service strategy is to provide training to health workers for the safety of hormonal contraception (Kingsley, 2010; Townsend et al., 2011; Stanback et al., 2001; Standback et al., 2010). One form of intervention to avoid the occurrence of Family Planning drop out especially hormonal family planning in this study more focused on pill contraceptives and injection 1 month and 3 months. The form of such interventions is by training midwives in counseling the side effects of hormonal contraception. The training is expected to give a positive influence on the performance of midwives which ultimately impact on the decrease in the incidence of Family Planning drop out. On the basis of these thoughts, the researchers wanted to do research on the Analysis of Counseling Training of Hormonal Contraception Side Effects on Midwives to Decrease Family Planning Drop Out in Lembang West Bandung.

Method

This research uses quasi experimental design with one group Pre test - posttest design model. Dependent variable is family planning dropout rate, knowledge and attitude, while the independent variable is in the form of training given to the midwife. Variable confounders age, education, long working. The population is 56 midwives. Non-random sampling, based on invitation letters that have been given to all midwives in Lembang sub-district and who are willing to attend a training of 30 midwives. For one midwife only 10 new or old birth control clients who used hormonal contraceptive pills, 1 month and 3 month injections were observed for 3 months to see family planning drop out data. Data collection technique in this research was conducted by using questionnaires to know knowledge and attitude of midwife before and after counseling training of side effect of hormonal contraception and observation sheet.

The data were analyzed by Wilcoxon and paired t test to analyze the differences of knowledge and attitude of midwives at each stage (pre test, post test) and multiple linear
regression analysis. This research was conducted in Lembang West Bandung. Implementation of the training was conducted in August 2015. The place of training implementation in the postgraduate building of Medical School of UNPAD. This research was started from June to November 2015.

Results

Table 1  Research Subjects Characteristics

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>Amount (n=30)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age (year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 35</td>
<td>19</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>≥ 35</td>
<td>11</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Mean (SD) : 33.4 (6,4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range : 25 – 48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diploma Degree (3 years)/D3</td>
<td>24</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Diploma Degree (4 years)/D4</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Length of Work (year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 10</td>
<td>14</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>≥ 10</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Mean (SD) : 11.2 (6,3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range : 3 – 26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on table 1 it can be seen that midwives aged less than 35 years are 19 people (63%) and the rest of midwives aged over 35 years is 11 people (37%). Mean age of midwife 33.4 years, standard deviation of 6.4 with range 25-48. Based on education, most of the respondents are D3 educated 24 people (80%) and the remaining D4 education is 6 people (20%). The results of the analysis on the length of work, the number of midwives with the length of work is more the same as from 10 years that is 16 people (53%) and the midwife with less than 10 years working time is 14 people (47%), the average length of work 11.2 years, standard deviation of 6.3 with range 3-26.

Table 2  
Comparison of Knowledge Scores, Attitudes, Decreased Family Planning Drop Out Before (Pre) and After (Post) Treatment

<table>
<thead>
<tr>
<th>No</th>
<th>Variable (scale 100)</th>
<th>Observation</th>
<th>P Value</th>
<th>% (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Knowledge</td>
<td>75</td>
<td>90</td>
<td>&lt; 0,001*</td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>60 – 90</td>
<td>65 – 95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Attitude</td>
<td>73.5 (4,529)</td>
<td>81.08 (4,97)</td>
<td>&lt; 0,001**</td>
</tr>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>65 – 82,5</td>
<td>70 – 90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Drop out (%)</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>(0 – 30)</td>
<td>(0 – 30)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 shows the percentage ratio between knowledge increase, increase in attitudes and significantly decreased drop out rate with p values of <0.001. The average increase of knowledge is 20%, for the increase of attitude 10.3% and the average decrease of Family Planning out drop is 66.1%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Initial Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>39.961</td>
<td>32.0</td>
<td>1.248</td>
<td>0.223</td>
</tr>
<tr>
<td>% Knowledge Increment</td>
<td>1.072</td>
<td>0.809</td>
<td>1.325</td>
<td>0.197</td>
</tr>
<tr>
<td>% Attitude Increment</td>
<td>1.378</td>
<td>3.116</td>
<td>0.444</td>
<td>0.661</td>
</tr>
</tbody>
</table>

*Note: based on linear regression test  F = 0.885  p = 0.425

Based on the results of the table above shows that any increase in knowledge then the decrease in Family Planning drop out will decrease by 1.072 as well as with any increase in attitude then the Family Planning drop out will decrease by 1.378. Based on the linear regression analysis there was no significant effect of counseling training on the hormonal contraception side effects on the decrease of Family Planning drop out.

**Discussion**

Knowledge is influenced by several factors, including education, occupation, age, interests, experience, culture and information. Based on the characteristics of respondents, most are <35 years old. Age affects a person in thinking, acting, and doing an action that is gained from in thinking, acting, and doing an action derived from the maturity of thought based on experience. The study informed that midwives with more mature ages were believed to have good attitudes in APN implementation after being released from training.

Educational characteristics are mostly graduates of Diploma Degree (D3) Midwifery. In Mid-Midwifery Diploma Degree (D3) curriculum, midwife candidates have been provided with material about counseling and contraception in accordance with their own authority. The result of research stated that there is a significant correlation between education level and nurse performance and one of the factors that can increase productivity or performance is education formal. Knowledge affects competence. Education is a state in a cognitive field conducting a learning (seeking information) for itself according to its needs, so as to enhance competence. The study explains that midwives with a high level of education will still have good knowledge after being released from training.

The results showed that most of the respondents have a long working ≥10 years. Length of work shows the experience of a person in carrying out the work, so the experience gained by someone will increase the competence in carrying out its duties. Another study explained that midwives with more than 10 years of work experience have a greater chance of performing well than midwives who work less than 10 years.

The knowledge which will be enhanced in this training is information on good family planning counseling, various side effects caused by hormonal contraceptives and midwife attitudes in dealing with side effects caused by hormonal contraceptives and all the information presented is in the counseling module of hormonal contraceptive side effects.

Counseling training on the side effects of hormonal contraception has been shown to increase knowledge. The results are in line with the results of the Nana’s study and the results of Sulastri’s research which states that the skills training (skill training) given to the midwife proved to increase knowledge. The principle of health training is not just a classroom lesson,
but it is a collection of experiences anywhere and anytime, so long as training can affect knowledge, attitudes and habits. Training materials are delivered using learning methods that involve participants actively in learning, the more active the trainees participate in the training process, the higher their motivation and the greater their retention. Wibawati's research shows that motivation is one of the most important dynamic aspects of the learning process.

Knowledge will determine attitude. Good knowledge is not necessarily followed by supportive and otherwise supportive attitude. The results show that midwives with good knowledge are followed with a good attitude. Basically a person's attitude is not an innate, but the result of interaction between the individual and his environment so that the attitude is dynamic. A person's attitude toward counseling the side effects of hormonal contraception can be influenced by various factors. Someone will be negative or not to provide counseling side effects of hormonal contraceptives due to incorrect information factors, socio-demographic factors, support, culture and religion. Meanwhile Mednick, Higgins and Kirschenbaum mention that the formation of attitudes influenced by social influences, individual characters and information that has been accepted by individuals. Attitudes will affect a person in behaving, a positive attitude toward the family planning program will have a positive correlation with the use of contraceptives.

The results of this study are consistent with the research of Sulastri; which states that there are significant differences in midwife attitudes before and after attending CTU training. Training will influence knowledge and knowledge plays an important role in the determination of attitudes and behaviors. The results of this study are consistent with research conducted by Mboe, et.al. stating that better knowledge and a more positive attitude are demonstrated by officers who have attended training and supervision. The formation of attitudes is primarily due to training, in addition to individual, cultural, media, and emotional experiences. Training provided to midwives creates trust or confidence in trainees. This belief gets stronger as trainees practice the counseling skills of hormonal contraceptive side effects.

The counseling training model for the adverse effects of hormonal contraceptives uses a competency-based training model with an adult learning principle approach, i.e. feedback that generates training participants' motivation. With motivation, emotional involvement causes trainees to awareness of receiving information, responding actively, assessing, establishing a value system for themselves based on convinced values, and ultimately forming a strong commitment to the behavior to be performed.

Training can be defined as an effort to improve the knowledge, skills and attitudes that lead to improved performance in certain environments. The training covers what employees need to know, what they should do and what they need so that they are successful in doing their job. Training focuses on cognitive and behavioral changes and the development of competencies that are critical to the performance of a job. Effective training can result in very high productivity, better work quality, increased motivation and commitment, high morale in teamwork, and minimizing errors leading to a strong competitive advantage.

Various studies were conducted to examine the gap problem between training and work performance. The results of qualitative research explain that there is a model in the process of training effectiveness that is training inputs that can affect the training results either directly or indirectly impact on output training. Training inputs consist of 3 categories: the characteristics of the trainee (cognitive ability, self-efficacy, motivation, and utility felt during the training), training design (behavioral model, error management, and realistic training environment) and work environment (climate, support, opportunity and follow-up).

The results of Rebecca's research indicate that the factors that play a significant role and significantly related to the success of the training are the characteristics of the trainees, the training design and the work environment. The results of this research is in line with the results of Veithzal Rivai research there are several factors that support the effectiveness of the training namely; materials or training content, training methods, trainers, trainees, training facilities and training evaluations. Supardi's research results suggest that based on the results of multiple regression analysis, the training method variables have greater influence than the training material variables.
Conclusion

From the above discussion, it can be concluded that the participation of trainees causes the training process to run quickly. In the training process, trainees are actively involved. Training by applying variety of learning methods helps trainees to more easily understand the material provided, in addition to making the trainees unsaturated. In addition, training providers should not consider that with the completion of formal training as the end of the learning process, training must be followed up with discussion, practice and feedback measures in order to promote the transfer of training.

References

Arfrida. 2003. Ekonomi Sumber Daya Manusia: Ghalia Indonesia;
Kingsley F, Salem RM.2010. Essential Knowledge About Injectable Contraceptives. In: ToolkitI,


Husband’s Support Toward Anxiety dealing with Labor and Outcomes of Maternal Birth in Primigravida (a prospective cohort study in Bandung Area)

R Noucie Septriliyana*, Yeni Rosyeni
Stikes Jenderal Achmad Yani Cimahi
*Email: nseptriliyana@gmail.com

Abstract

Anxiety is the highest position which was experienced by mother during pregnancy and delivery. That condition is caused, for woman psychology when facing delivery process, would always be covered with fear and more intense approaching the delivery process, especially, on primigravida. Therefore, support from husband is needed to give secure and comfortable feeling and a good outcome of delivery. The aim of research is to analyze the relationship of husband’s support and the anxiety of primigravida in facing delivery and analyzing the relationship of anxiety and outcome of delivery. Research design was using prospective cohort an number of sample were 95 respondents. Chi square calculation result showed there was relationship (p= 0,001) between husband’s support and anxiety of pimigravida, if the husband did not give support with probability 97,94% have anxiety. There was relationship between mother’s anxiety in facing over outcome of delivery (mothers : p= 0,013 and fetal p= 0,038) and if the husband did not give support and have anxiety have delivery with probability 54,5%, and then mother with anxiety have under of APGAR with probability of 51,9%.

Key Words : Anxiety, outage of delivery, support

Introduction

Pregnancy and childbirth are the chain of life events in the development of female reproduction. Every development of reproduction will experience changes that will cause a stressor in a woman's life. If this condition continues to occur it will affect the quality of life of women and children born.1-6

Anxiety ranks the top most frequently experienced mother during pregnancy and childbirth. Taylor states that anxiety in pregnant women occurs as a result of the aging of pregnancy. The condition is caused by the psychological of women who face the process of childbirth will always be overwhelmed by an increasingly intensive fear before the birth process comes primarily on primigravida. The fear of pain and pain experienced in labor leads to painful labor especially in the primigravida pregnant women.7,8

The smoothness of a labor process in addition to being influenced by factors Power (motherhood), passage (birth path), and passanger (fetus) is also influenced by psyche (psychological). Pregnant women who experience anxiety in the process of labor will result in muscular tension in the birth canal. According to Dayan and Conde, in his research on pregnant and maternal women showed that the incidence of fetal distress, asphyxia, premature, low birth weight in newborn contributed by mothers who experienced anxiety and depression.9-14

The above conditions can be helped by the role of the husband through support during pregnancy and childbirth. This support is in the form of goods, services, information, and advice which makes the recipient of support will feel loved, appreciated, and peaceful.

Methods

The method to be used in this research is analytic observational method with prospective cohort design research on primigravida mother. The population of this study was primigravida during the third trimester of pregnancy examined pregnancy in RSKIA Bandung. The sample in

63
this study were primigravida mothers with the third trimester of pregnancy and monitored until labor. The sample size in the cohort study can be calculated using the sample formula based on the Lameshow that is 95 respondents. Data analysis using Bivariate. Inclusion criteria have been established in this study are: Married and have a husband, the first pregnancy, age of pregnancy 37-42 weeks. Exclusion criteria of research subjects are: Not located in the region of Bandung and pregnant women who are not willing to be the subject of research.

### Results

#### Tabel 1. Relationship between Husbands support during Anxiety in Primary Mother at RSKIA Bandung Period September 2010 - July 2011

<table>
<thead>
<tr>
<th>Support</th>
<th>Anxiety</th>
<th></th>
<th></th>
<th>Total</th>
<th>P</th>
<th>Counted X²</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsupported</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>76.6</td>
<td>11</td>
<td>23.4</td>
<td>47</td>
<td>100</td>
<td>11.97</td>
</tr>
<tr>
<td>Supported</td>
<td>20</td>
<td>41.7</td>
<td>28</td>
<td>58.3</td>
<td>48</td>
<td>100</td>
<td>0.001</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>58.9</td>
<td>39</td>
<td>41.1</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Statistical test results obtained p value = 0.001 and X² count 11.97 then there is a significant relationship between husband support during delivery with anxiety mother primigravida third trimester in the face of labor. The value of RR = 1.84 (95% CI: 1.27-2.66), means that the primigravida mother has 1.84 times chance of anxiety if not get support (Unfavorable) from husband at delivery.

#### Tabel 2. Relationship of Anxiety with Outcomes of Maternal Birth to Primigravida

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Labour output (mother)</th>
<th></th>
<th></th>
<th>Total</th>
<th>P</th>
<th>Counted X²</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UnSpontaneous</td>
<td>Spontaneous Labor</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
<td>7.31</td>
</tr>
<tr>
<td>Low</td>
<td>12</td>
<td>30.8</td>
<td>27</td>
<td>69.2</td>
<td>39</td>
<td>100</td>
<td>0.013</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>47.4</td>
<td>50</td>
<td>52.6</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Statistical test results obtained p value = 0.013 and counted X² 7.31 it can be concluded that there is a meaningful relationship between anxiety facing childbirth with the outcome of maternal delivery. The analysis results also obtained RR = 1.91 (95% CI: 1.14-3.32), which means that anxious mothers have a chance of 1.91 times of labor with help.

### Discussion

Statistical test results obtained p value = 0.001 and X² count 11.97 it can be concluded that there is a meaningful relationship between husband support during delivery with anxiety mother primigravida third trimester in the face of labor. The value of RR = 1.84 (95% CI: 1.27-
2.66), means that the primigravida mother is 1.84 times more likely to experience anxiety if she does not get support from her husband during childbirth.

According to some experts stated that the psychological and emotional conditions of primigravid moms are dominated by feelings and thoughts about impending labor, causing anxiety, anxiety, fear and tension in the face of labor pain. This psychological state will cause anxiety and intensification of intensive primigravida during the last weeks before delivery.

Husband's support given during primigravida and labor may affect the occurrence of anxiety. According to Ruth, the husband in providing support during labor can do things like: give encouragement that will be needed if labor is longer than anticipated, massage the body (effleurage) so as not to be too tense or to distract the wife from contraction, make sure the wife feels comfortable, holding a wife while straining for the wife to have a handle when encouraging and leading the wife to mengedan the most effective way.

In a study conducted by Sengane (2006), an increase in both physical and psychological dependence occurred in primigravid women. Physical and psychological changes occurring in primigravid women increase dependency need which indicates the need for greater attention, the desire to ensure that the necessary assistance is available, and the desire for husband's involvement.61

Statistical test results obtained p value = 0.001 and X2 count 11.97 it can be concluded that there is a meaningful relationship between husband support during delivery with anxiety mother primigravida third trimester in the face of labor.

According to some experts stated that the psychological and emotional conditions of primigravid moms are dominated by feelings and thoughts about impending labor, causing anxiety, anxiety, fear and tension in the face of labor pain. This psychological state will cause anxiety and intensification of intensive primigravida during the last weeks before delivery.

Husband's support given during primigravida and labor may affect the occurrence of anxiety. According to Ruth, the husband in providing support during labor can do things like: give encouragement that will be needed if labor is longer than anticipated, massage the body (effleurage) so as not to be too tense or to distract the wife from contraction, make sure the wife feels comfortable, holding a wife while straining for the wife to have a handle when encouraging and leading the wife to mengedan the most effective way.

In a study conducted by Sengane, an increase in both physical and psychological dependence occurred in primigravid women. Physical and psychological changes occurring in primigravid women increase dependency need which indicates the need for greater attention, the desire to ensure that the necessary assistance is available, and the desire for husband's involvement.

Statistical test results obtained p value = 0.013 and X2 count 7.31 it can be concluded that there is a meaningful relationship between the anxiety of the delivery with the outcome of maternal delivery. Pregnancy and childbirth for a woman involves not only the somatic process, but having psychological effects, as well as the close connection with the feelings of self, the fetus it contains, the husband, and the environment. These life changes are stressors of life manifested as anxiety and fear.

The anxiety that occurs is caused by feelings of fear, tension and pain or so-called fear-strained pain syndrome. This feeling is felt by many respondents in this research when facing childbirth. The syndrome is described as a vicious circle (circulus vitiosus). The pain that is felt by the mother is due to his form of heartburn the longer the stronger the impulse sends through the thalamo-limbic system to the brain which can then lead to psychologic changes characterized by feelings of fear and anxiety.

Feelings of fear and anxiety in labor lead to the emergence of vegetative tension in the smooth muscles and blood vessels so that this state will be manifested in the cervical stiffness so that the pain impulse increases and affects the progress of labor.

When mothers are cared for and supported during pregnancy and childbirth and knowing well the process of childbirth and care they will receive, they will gain a sense of security and better outcomes. Among other things mentioned besides delivery will take place more quickly,
the care will also reduce the number of deliveries with acts such as vacuum extraction, and caesarean section.  

Anxiety experienced by pregnant women before delivery will greatly affect the birth process of the fetus it contains. Anxiety in pregnant women brings impact and influence to physical and psychic to mother that it contains; with a marked increase in some ‘stress’ hormones that can lead to an event called: vasoconstriction, or spasm of the maternal blood vessels, with a marked decrease in blood flow from the uterus to the placenta, resulting from a decrease in the flow of acidic substances, or oxygen and nutrient flow, or nutrients from the mother's bloodstream to the fetus's bloodstream in the placenta thus affecting the well-being of the fetus.  

Conclusion

Conclusion of research result and discussion about Husbandry Support Relationship to Anxiety Facing Delivery and Outbreak of Birth at Primigravida Mother that is as follows; 1) There is a significant relationship between husband support and anxiety when facing childbirth in primigravida mother, 2) There is a significant relation between anxiety when faced with delivery of maternal and fetal delivery in primigravida mother. This finding suggest that it is necessary to provide information or knowledge about anxiety and how to deal with it during pregnancy and childbirth. In order to prepare the physical and psychological conditions of mother and husband in the face of pregnancy and childbirth through, 2) The need to improve the quality of support provided by the birth of the husband so that mothers feel comfortable and safe during labor. 3) The need for support by health workers, especially midwives in applying support for delivery by husbands so that the maternal mothers become more comfortable during the birth process takes place.

Acknowledgment

Alhamdulillahi rabil ‘alamin, the researcher expresses his highest gratitude to Allah SWT for blessing, love, opportunity, health, and mercy to complete this research. In arranging this research, a lot of people have provided motivation, advice, and support for the researcher. In this valuable chance, the researcher intended to express his gratitude and appreciation to all of them. I gratefully thank to the principal of Dean of Stikes Jenderal Achmad Yani Cimahi, and Chairman of RSKIA kota Bandung for allowing me to conduct the research there.

References


-------------------

Human Development Index. United Nation Development Program. New York : 2009


Al R.A, Yalvac S, Altar OY, Dolen I. Perceived pain and anxiety before and after amniocentesis among pregnant Turkish women. Journal Unit of Perinatology, Maternity and Women's Health Teaching Hospital. Turkey. 2009 : 184-6


Vythilingum B. Anxiety Disorder in Pregnancy. Journal Department of Psychiatry, Faculty of Health Sciences University of Cape Town. South Africa. 2008 : 331-5

Prawirohardjo SWH, Sumaprdja S, Saifuddin AB. Ilmu Kebidanan. Yayasan Pustaka Sarwono Prawirohardjo. 2004
Maternal anxiety induced by prenatal diagnostic techniques: detection and management. Pubmed. 2001: 440-6


Muera, Ribera. Health Seeking Behavior And The Health System Responses. 2003: 10


Farrer H. Perawatan Maternitas. EGC. Jakarta. 2001


Ibrahim AS. Panik Neurosis dan Gangguan Cemas. Dua AS-AS. Jakarta. 2007: 14-56


The Pattern of Family Support toward Elderly at Hamlet II of Kadipiro Urban Village of Banjarsari Subdistrict of Surakarta City

1Mujahidatul Musfiroh*, 2Ika Sumiyarsi Sukamto
1,2 Department of Midwifery, Faculty of Medicine, UNS
*Email: mujahidatul_m@staff.uns.ac.id

Abstract
The development task of elderly is to reach a happy and prosperous elderly life. The happiness and prosperity life of elderly is influenced by family support. The family support toward elderly at home includes emotional support, instrumental support, information support, and appraisal support. This research aims to know the pattern of family support on elderly at home. This research employs the analytic observational method with cross sectional approach. The sample collection method uses purposive sampling and it takes 102 respondents. The family support data is collected using questionnaire. The result of the research shows that 37 respondents have a low family support (< 27) and 65 respondents have a high family support (≥ 27). The supports which are mostly given by the family toward elderly are emotional support, appraisal support and information support. The result of run test shows the r value = 0.009 (< 0.05), so that the data of family support toward elderly in this research obtained an autocorrelation. The family support toward elderly is influenced by the condition and ability of family in conducting their role.

Key words : Elderly, family, family support

Introduction
Indonesia enters the aging structured population, because the number of elderly population in Indonesia has reached 7.18%. The islands which have the top position of elderly population are Jawa and Bali. The estimation set by the Central Bureau of Statistics, the growth of elderly population in Indonesia in 2025 reaches 34.22 people (Effendi, 2009).

The increase of elderly population highlights a risk on the elderly health risk which is caused by aging process. The aging process or the process of becoming aging is an unavoidable natural process, runs continuously and sustainably in human life cycle. The aging process is signed by the changes of physic, psychology and social (Maryam, 2008). The problem which is raised by the changes during the aging process includes the social value which is prone to have a decline of appreciation and respect toward elderly, physical decline, social role decline, mental condition decline, physical movement restriction, physical mobilization restriction, body balance disruption, circulatory disorders, visual disorders, hearing disorders and tactile disturbance (Hardyanto, 2005).

The changes in elderly need an intensive nursing action, either on promotive or preventive (Maryam, 2008). The basic nursing action and the main nursing action can be conducted by the family. Family is the part of society which has a big role to form a healthy culture. Family is the first place of establishment of well-structured society. The support and the education in family will build a culture in society (Setiadi, 2008). The family has four functions; those are affective function, socialization function, reproduction function and economic function. Family function which is needed in delivering the support toward the elderly is affective function. The affective function is one of the family functions which are related to perception and care toward the socio-emotional need of all members of family. The affective function of family can fulfill the elderly psychological need, so that the elderly can continue their life happily and prosperously. The affective function of family includes caring behavior, mutual respect behavior and mutual family bonding behavior. The affective function can be conducted if there is a relationship between the family members, family with the social environment. The relationship between the family members and the relationship between the family and their social environment is the part of family support (Friedman, 2010).
The family support is a reciprocal relationship between the family members and between the family members with the social environment, which inside of it, there is a quality and quantity of communication, emotional attachment and the trust from the members of family. The family support toward the elderly is a form of external family support, because the elderly is the nuclear family’s external member (Friedman, 2010). The lack of family support in the treatment of elderly will cause a dependent elderly. The elderly who is unable to do his activity independently will cause the elderly becomes the family burden, so that the elderly cannot run their life contributively, happily and prosperously (Maryam, 2008).

Family is the smallest unit of society. The family has an important role in the nursing action toward the elderly, because family is the provider of important sources to deliver the health service for the family members including the elderly (Ali, 2010). The family support has an influence toward the continuity life of the elderly. The elderly who obtains a high family support can continue their life happily and prosperously. This research shows the pattern of family support toward elderly in hamlet II, Kadipiro Urban Village, Banjarsari Subdistrict, Surakarta city.

Method

This research is used the employs the analytic observational research design with the cross sectional approach. The population of this research is the family who lives in one house with elderly and lives in Hamlet II, Urban Village of Kadipiro, Subdistrict of Banjarsari, Surakarta city. The sample collection technique in this research uses purposive sampling. The sample is taken from the family population who lives in one house with elderly in the area of Hamlet II, Urban Village of Kadipiro, Subdistrict of Banjarsari, Surakarta city. The total of sample in this research is 102 respondents which fulfills the restriction criteria. The research observation includes the form or pattern of family support toward elderly in home. The research instrument uses a questionnaire of the family support toward elderly. The analysis of research is conducted under assistance of SPSS program.

Results

The result of the research shows the average score of family support of 26.64, the mean score for family support is 27 with the minimum score is 15 and the maximum score is 30. The family support in this research includes the emotional support, instrumental support, information support, appraisement support and family and the pattern of family treatment. The major family supports which are delivered toward the elderly are emotional support, appraisement support and information support. The data of family support is shown in table 1.

<table>
<thead>
<tr>
<th>Score</th>
<th>Family Support</th>
<th>Emotional Support</th>
<th>Instrumental Support</th>
<th>Information Support</th>
<th>Appraisement Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>26,64</td>
<td>6,82</td>
<td>4,78</td>
<td>6,56</td>
<td>6,62</td>
</tr>
<tr>
<td>Median</td>
<td>27,00</td>
<td>7,00</td>
<td>5,00</td>
<td>7,00</td>
<td>7,00</td>
</tr>
<tr>
<td>Maximum</td>
<td>30</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Minimum</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Source : Primary Data, 2017
Table 2. Data Categorization of Family Support toward Elderly in Hamlet II, Kadipiro Urban Village, Banjarsari Subdistrict, Surakarta City in 2017

<table>
<thead>
<tr>
<th>Category</th>
<th>Family Support</th>
<th>Emotional Support</th>
<th>Instrumental Support</th>
<th>Information Support</th>
<th>Appraisement Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>37 (36.27%)</td>
<td>13 (12.75%)</td>
<td>42 (41.18%)</td>
<td>25 (24.51%)</td>
<td>20 (19.61%)</td>
</tr>
<tr>
<td>High</td>
<td>65 (63.73%)</td>
<td>89 (87.25%)</td>
<td>60 (58.82%)</td>
<td>77 (75.49%)</td>
<td>82 (80.39%)</td>
</tr>
<tr>
<td>Total</td>
<td>102 (100%)</td>
<td>102 (100%)</td>
<td>102 (100%)</td>
<td>102 (100%)</td>
<td>102 (100%)</td>
</tr>
</tbody>
</table>

Source: Primary Data, 2017

The statistical analysis with the run test shows the r score for family support is 0.009 (< 0.05). The r score for family support shows that the data for family support obtains an autocorrelation. So that the family support toward the elderly is influenced by various factors.

Discussion

The family support toward the elderly includes emotional support, instrumental support, information support and appraisement support (Friedman, 2010; Setiadi, 2008). The family supports in this research which have high score are emotional support, appraisement support and information support. The emotional supports which is delivered toward the elderly are: the family delivers the information toward the elderly about how to keep their health (100%), the family delivers the suggestion toward the elderly to routinely check their health to the health facility (doctor, Community Health Service, hospital) (100%), the family tries to make the elderly feels happy and glad (100%), the family listens to elderly vent (97%), family delivers an attention to every activity which is done by the elderly (97%), family delivers the trust to the elderly to do their activity (96%), family gives the respect toward every decision which is taken by the elderly (97%), family gives the respect toward every decision which is taken by the elderly to still do their hobbies and activities (94%), the family suggests the elderly to be active in participating in the social activity in their home environment (88%), the family suggests the elderly to visit or meet their friends (85%). The emotional support which is given toward the elderly is suitable with the emotional support according to Setiadi (2008), those are included for advice, suggestion, instruction and information for the elderly. According to Friedman (2010), the emotional support includes the support in the form of affection from the family to elderly, the existence of trust, attention, listening to and being listened and being appreciated. The emotional supports are the expression from empathy, care, and attention from the family toward the elderly. The emotional support of family can create a comfortable feeling, a guarantee of sense of belonging and a sense of being loved, assistance in the form of support, personal warmth, love, affection and emotion toward the elderly (Friedman, 1998).

The appraisement supports in this research are the family supports the positive activity which is done by the elderly (100%), the family suggests the elderly to diligently do their prayer (99%), the family delivers the appreciation toward the elderly (98%), the family gives the respect toward every decision which is taken by the elderly (97%), the family supports the elderly to still do their hobbies and activities (94%), the family suggests the elderly to be active in participating in the social activity in their home environment (88%), the family suggests the elderly to visit or meet their friends (85%). The appraisement forms are in the form of appreciation or positive appraisal toward the elderly (Triswandari, 2008; Murodion, 2006). The family appraisement support toward the elderly is influenced by the quality and quantity of interpersonal relationship. The family appraisement support for elderly can be in positive appraisement and negative appraisement. The family appraisement support which is aimed for the elderly to be able to continue their life happily and prosperously which is the positive appraisement support (Triswandari, 2008). The family positive appraisement support can push
the elderly to be developed, independent and have a high self-esteem and feel to be respected (Nugroho, 2008). The assistance of appraisement support by the family is based on the acceptance of family toward the limitation owned by the elderly. The form of appraisement supports are the assistance of help toward the elderly, the appreciation and attention to the elderly (Setiadi, 2008).

The information supports which are conducted by the family toward the elderly are: the family reminds the elderly about many things which should be avoided by the elderly so that they can still be healthy (97%), the family suggests the elderly to consume highly-nutritious foods (97%), the family gives the information about the health tips which can be done by the elderly (96%), the family provides the television and radio as the information and entertainment for elderly (94%), the family helps the elderly in solving the problem which is faced by the elderly (92%), the family suggests the elderly to do a regular exercise (91%), the family provides the guide about the activities which are suitable for the elderly (88%). The form of information supports which can be delivered by the family for the elderly are giving the suggestion or critic, giving the advice or guide and giving a useful information for elderly, providing the information facilities and entertainment facilities such as television, radio, newspapers, magazine, and internet facility (Friedman, 2010; Setiadi, 2008; Sitanggang, 2011). The aspects in information facility are advice, suggestion, instruction and information delivery (Setiadi, 2008). The information support also includes the supervision about the diet pattern and medical treatment, providing the information and suggesting the elderly to go to the health facility and action or activity for elderly to reduce their stress (Friedman, 1998).

Instrumental supports in this research is the family gives the time to accompany the elderly (94%), the family invites the elderly to communicate and to do the family activity (94%), the family establish a non-slick house floor so that the elderly cannot easily falls (87%), the family provides the nutritious foods to be consumed by the elderly (87%), the family picks up the elderly when they go somewhere (74%), the family provides the transportation to ease the elderly to move (68%), the family helps to provide the cutlery and toiletries which are needed by the elderly (35%), the family helps the elderly to do their daily activity, such as get bath and eating (33%). The family instrumental supports are the form of support or assistance from the family in the form of energy, finance and time for elderly. The form of instrumental supports are: providing the facilities for elderly, providing the medicines which are needed by the elderly, providing the cutlery, toiletries, clothes, giving a simple and concrete help, providing the nutritious foods, giving the free time for elderly to take a break (Friedman, 2008; Friedman, 2010; Setiadi, 2008).

The family supports have the influence toward the independency of elderly, so that the elderly can continue their life happily and prosperously. The support of family toward the elderly can create a comfort and inner peace and happiness for elderly. The family supports toward elderly are needed to support the confidence of elderly and the sense of being able to adapt with their surroundings. The family support also effects on the easiness of the elderly to join the social activities in their surroundings such as elderly local health clinic and to help them to still do their activity (Kresnawati, 2011; Hawari, 2001). Family is the main supporting system for the members of family including the elderly (Friedman, 2008). The elderly who obtains the support from the family has a better life quality, more independent and healthier (Kaur, 2015). The support from family contributes toward the health and the prosperity of the elderly. The family support toward the elderly is influenced by some factors, they are economy, social, culture, environment, technology development, government policy or politic, and the availability of facility for elderly (Knodel, 2012; Romer, 2002). The result of research shows there is an autocorrelation on the family support data, so that the family support in this research is influenced by some internal factors (the family ability, knowledge, attitude and family behavior) or external factors (environment, culture, social, policy and availability of services).

**Conclusion**

The family supports toward the elderly include the emotional support, appraisement support, information support and instrumental support. The major supports which are delivered to the
elderly are emotional support, appraisement support and informasi support. The instrumental support is not too much given by the family, because the instrumental support is highly connected to the family ability to provide the facility for elderly.

Acknowledgment
This research can be conducted upon the assistance of the chief and the manager of Elderly Clinic of Hamlet II, Kadipiro Urban Village, Banjarsari Subdistrict, Surakarta city, all of the coordinators of Elderly Clinic of Neighborhood Association of 1-8, Hamlet II, Kadipiro Urban Village, Banjarsari Subdistrict, Surakarta city, the Chief and the Staffs of Institute of Research and Community Service of Universitas Sebelas Maret, Alumni of Department of Midwifery, Faculty of Medicine of UNS.

References
The Role of Mother Cares Applications (MOCA) towards Knowledge and Parenting Skills in Stimulating Growth

1Mega Dewi Lestari*, 2Dede Waslia
1,2 Department of Midwifery, School of Health Sciences Jenderal Achmad Yani

*Email: mega312209011@gmail.com

Abstract
Baby's brain experiences the fastest growth and development at the age of 0-6 months. Developmental abnormalities due to lack of stimulation during this period would have caused long-term consequences. Mother's knowledge and skill in stimulating would determine the growth of baby. Fifty-three percent of adults have smartphones. Smartphone apps can be used to aid medical activities such as health promotion. Application mother cares (MOCA) is a guide in the smartphone in the form of animation to allow parents to stimulate the growth of toddlers. The purpose of this study is to analyze the role of MOCA towards knowledge and skills of parents in stimulating the growth of infants aged 0-6 months. True experiment was used in the study design. Furthermore, pre-post test with control group design was conducted in June-July 2016 in the work area of Public Health Center (Puskesmas) Ibrahim Adjie, Bandung, with 60 respondents based on proportionate stratified of random sampling. Statistical analysis used was Mann-Whitney test and Wilcoxon test (p <0.05). There were significant differences of the scores of knowledge and parental skills in giving stimulation between intervention and control groups with p values for each of 0.003 and 0.008. The conclusion is MOCA application plays a role to increase knowledge and skills of parents to stimulate the growth of infants aged 0-6 months.

Keywords: Application of Mother Cares (MOCA), baby aged 0-6 months, knowledge, skill, growth stimulation.

Introduction
Research data of basic health in 2013 found that there was an increased prevalence of malnutrition of toddlers from 17.9% in 2010 to 19.6% in 2013. Moreover, the prevalence of stunting toddlers reached 37.2%, and 16% of toddlers in Indonesia experienced developmental disruption with the highest prevalence occurred in language disorder (13.8%) (Riskesdas, 2013; Dewi, 2012).

The first thousand days of life greatly affect cognitive and physical development (Deisye, 2015). In this period, the development of brain is very fast up to 80% (Dewi, 2009). Growth and development of baby are interrelated and influenced by the environment, occur in a singular time, and cannot be repeated again (Niken, 2014; Depkes RI, 2013). Stimulation is an activity undertaken to arouse child's basic abilities. Aberration of growth and development might be caused by lack of stimulation (Ari, 2014; Depkes RI, 2013).

Permenkes RI number 66 year 2014 is currently a reference to optimize child growth through stimulation, detection, early intervention of child growth and development (SDIDTK) and also provision of KIA books (Kemenkes RI, 2014). Alas the use of SDIDTK still relies on health workers in local health post (posyandu) so that there was an increase in percentage of under-five children who have never been weighed from 23.8% in 2010 to 34.3% in 2013 (Riskesdas, 2013; Siti dkk, 2012). Besides, outcome of Maritalia (2009) research indicated the implementation of SDIDTK still limited to early detection of growth aberrations caused by the lack of support from the heads of Public Health Center (Puskesmas), people in charge of SDIDTK who neither have been trained nor been socialized, and also inadequate of supporting
facilities for stimulation and early detection of growth. Therefore, KIA books shared are never read by parents at home.

The role of parents in nurture is crucial to the growth of the child (Wina, 2012). Parental knowledge and skills can be improved through information delivery. Computer Technology Research (CTR) states that one can remember 80% of what is heard, viewed, and performed at once. Animation is one of the media that can be used to increase knowledge and skills compared with other media (Danang, 2014). Research Center's Internet and American Life Project 'Mobile Health" (2013) reports that 88% of 53% of Smartphone users use smart phones because it is easy to use, easy to carry, standalone, and more efficient (Maged, 2014). Application mother cares (MOCA) is a guide in the Smartphone in the form of animation to allow parents to stimulate the growth of toddlers.

Method

The design used in this study is true experiment and pre-posttest with control group design. The study was conducted in June-July 2016 in the working area of Public Health Center (Puskesmas) Ibrahim Adjie, Bandung. Respondents in this study were 60 respondents with 30 respondents as control group and 30 respondents as intervention group. The sampling technique used based on probability sampling is proportionate stratified random sampling. Statistical analysis used was Mann-Whitney test and Wilcoxon test (p <0.05).

Results

Table 1
Characteristics of Respondents both in Intervention Group and Control Group

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Group</th>
<th>Value p*)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (n = 30)</td>
<td>Control (n = 30)</td>
</tr>
<tr>
<td>1. Age (years old)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>9 (30%)</td>
<td>5 (16.7%)</td>
</tr>
<tr>
<td>20–35</td>
<td>17 (56.7%)</td>
<td>19 (63.3%)</td>
</tr>
<tr>
<td>&gt;35</td>
<td>4 (13.3%)</td>
<td>6 (20%)</td>
</tr>
<tr>
<td>2. Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (elementary, junior high)</td>
<td>13 (43.3%)</td>
<td>17 (56.7%)</td>
</tr>
<tr>
<td>Medium (high school)</td>
<td>15 (50%)</td>
<td>11 (36.7%)</td>
</tr>
<tr>
<td>College</td>
<td>2 (6.7%)</td>
<td>2 (6.7%)</td>
</tr>
<tr>
<td>3. Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>20 (66.7%)</td>
<td>24 (80%)</td>
</tr>
<tr>
<td>Working</td>
<td>10 (33.3%)</td>
<td>6 (20%)</td>
</tr>
<tr>
<td>4. Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>14 (46.7%)</td>
<td>10 (33.3%)</td>
</tr>
<tr>
<td>Multipara</td>
<td>16 (53.3%)</td>
<td>20 (66.7%)</td>
</tr>
</tbody>
</table>

Information:
*) Based on Chi Square Test

Table 2
Comparison of Knowledge Score Before and After Given Intervention

<table>
<thead>
<tr>
<th>Knowledge Score</th>
<th>Group</th>
<th>Value p*)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (n=30)</td>
<td>Control (n=30)</td>
</tr>
<tr>
<td>- Pretest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average (Elementary)</td>
<td>72.5 (8.1)</td>
<td>69.5 (11.2)</td>
</tr>
<tr>
<td>Median</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>
Range 55-85 50-85 0.003

- Posttest
  Average (Elementary) 83 (9.2) 75.8 (8.7)
  Median 85 75
  Range 65–100 60–100

Comparison
Pretest vs Posttest **) p< 0.001 p < 0.001
% Rise (mean) 14.8% 7.4% 0.032

Information:
*) Mann-Whitney Test  **) Wilcoxon Test

### Table 3

<table>
<thead>
<tr>
<th>Knowledge Score</th>
<th>Group</th>
<th>Value p*)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (n=30)</td>
<td>Control (n=30)</td>
</tr>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average (Elementary)</td>
<td>63.9 (11.8)</td>
<td>57 (13.3)</td>
</tr>
<tr>
<td>Median</td>
<td>63.6</td>
<td>62.5</td>
</tr>
<tr>
<td>Range</td>
<td>41-82</td>
<td>29-76</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td>&lt;0.008</td>
</tr>
<tr>
<td>Average (Elementary)</td>
<td>81.1 (9.2)</td>
<td>74.7 (10.7)</td>
</tr>
<tr>
<td>Median</td>
<td>82.3</td>
<td>78.9</td>
</tr>
<tr>
<td>Range</td>
<td>53-94</td>
<td>52-94</td>
</tr>
<tr>
<td>Comparison</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest vs Posttest **)</td>
<td>p&lt; 0.001</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>

Information:
*) Mann-Whitney Test  **) Wilcoxon Test

**Discussion**

According to table 1, it can be seen that most respondents are aged 20-35 years, with low education (elementary, junior high), not working, and multipart. In addition, it can be seen that there is no significant difference from the characteristics of respondents which includes age, education, occupation, and parity between the two groups with the value of p respectively: 0.437; 0.563; 0.243; and 0.292 (p> 0.05). Thus it can be concluded that the intervention group and the control group have homogeneous and feasible characteristics to be analyzed in this study.

Age is associated with experience in parenting, other than that it is also associated with the ability to grasp and the mindset of a person (Baiq, 2011; Fatimah dkk, 2013). In addition to age, there is a significant relationship between maternal education with the implementation of stimulation, early detection and early intervention of child development. The higher the level of formal education the wider the amount of insight thinking, so that more information obtained (Baiq, 2011; Fatimah, 2013). Employment and socioeconomic status will also affect a person in providing the necessary facilities for carrying out an activity (Fatimah, 2013). The stimulation done by parents is based on what they have done to the previous child, so in the stimulation, the parents’ parity also affects (Stevens, 1984).

Based on table 2 it can be seen that the knowledge score during pretest in the intervention group and control group has p value = 0.263 which means the initial knowledge about growth stimulation between the two groups is not different. While at posttest obtained p value = 0.003 which indicates that after posttest there is significant difference of knowledge score between both group. The intervention group had median and range values higher than the control group. Both groups experienced an increase in knowledge score, but the percentage increase in the intervention group was greater than the control group (14.8% VS 7.4%). This shows that the MOCA application plays a role in increasing the knowledge of parents.
Increased knowledge is able to occur after a person makes sense to a particular object (Dohah, 2014). To obtain optimal results/effective in the delivery of messages required health education media. The use of media is meant to exert as many senses as possible to a message (Notoatmodjo, 2010). The knowledge gained will become clearer as more and more senses are used. A person can remember 50% of the views, 30% of the hearing, and 80% in total if both are simultaneous (Danang, 2014).

Audio visual media is better education than words in the delivery of information (Notoatmodjo, 2010; Vicky, 2012). The use of multimedia will be more interesting and effective in messaging, because of the combination of views, sound and movement (Notoatmodjo, 2010; Richard dkk, 2014). Animation is proven to significantly increase knowledge about long-term health information and effectively provide health information compared to pamphlets. Illustrations in animation help improve users’ memory, material understanding, and satisfaction, as they are more interesting and use multiple senses when it is being used (Sheba dkk, 2013; Mark dkk, 2010). Mother cares application (MOCA) is a guide in the smartphone in the form of animation so as to improve knowledge better than with other methods.

Based on table 3, it can be seen that the pretest skill score in the intervention group and the control group has a p value of 0.07, which means the initial skill about the growth stimulation between the two groups is no different. At the posttest it can be seen that both groups experienced an increase in skill score (p <0.001), but the intervention group had median and range values higher than the control group. Obtained p value = 0.008 indicating that after posttest there is significant difference of skill score between intervention group and control group.

Increased individual skills begins by providing insights (Notoatmodjo, 2010). Information will be prominent if the intensity is high, and repeated (Notoatmodjo, 2012). Mother can become skilled in parenting for her child by utilizing the app on a Smartphone. The use of online-based applications to move the role of parents in parenting for their babies can improve baby's growth and development (Sanders dkk, 2016). The mother cares application (MOCA) is a stimulation guide for infant and toddler growth in a Smartphone packaged in an exciting animated form, it comes with reminders that can improve the mother's skill.

Conclusion

Mother Cares Applications (MOCA) has a role on improving knowledge and skills of parents in stimulating the growth of infants aged 0-6 months. The MOCA application can be used as an alternative guide for parents to stimulate the growth of infants aged 0-6 months independently in addition on using MCH books which can assist the implementation of SDITDK program at the Public Health Center (Puskesmas). This application can also be used for early detection of delay or developmental disorders of infants aged 0-6 months at the family level. Further research is needed to look at other factors that influence parents' knowledge and skills in stimulating growth.

Acknowledgment

Thanks to MOCA team and IT team from CV, particularly to Artama Selfira who had helped on the making of MOCA applications in this research. Moreover, the researcher also thank the whole range of health workers and cadres in the working area of Public Health Center (Puskesmas) Ibrahim Adjie, Bandung and the respondents who had cooperated in this study.

Reference


Cares (MOCA) Application Toward Knowledge And Parent’s Skills In Stimulation Implementing Of Infant’s Growth And Development Age 6-12 Month

Yuliana
Budi Luhur Cimahi Institute of Health Sciences
Email: yulianawiguntoro@yahoo.com

Abstract
The golden opportunity to undertake early detection and stimulation of infant’s growth and development is on age 6-12 month. After that period, there is no other can be done to the infants, except to implement the infants’ growth and development efforts optimally. The knowledge and competency of parents have an important role because they are able to recognize their infant’s growth and development integrity. The smartphone users in Indonesia are 93%, so that smartphone applications can be functioned as media to implement the health promotion. Mother cares (MOCA) application provides information such as animation to assist the parents in detecting and implementing simulation of infant’s growth. This research aimed to analysis the role of MOCA application toward parent’s knowledge and skills in implementing of stimulation on infants growth age 6-12 month. The research done in June-July 2016 at Ibrahim Adjie Bandung Community Health Center area work used true experimental design, pre-posttest with control group design and the respondents were as many as 60 respondents based on proportional random sampling. Statistical analysis used in the research was T-test uncouple, Mann-Whitney test, and Wilcoxon test (p<0.05). Score result of parents’ knowledge and competency in implementing of stimulation between intervention groups and control, there was a significant comparative with p value was in each of them 0.002 and 0.013. The research conclusion is MOCA application has a role on increasing the parent’s knowledge and competency in implementing infant’s growth and development age 6-12 month.

Keywords: Application, infants, knowledge, skills, stimulation

Introduction
Republic of Indonesia Health Dept regulation number 66 in 2014, Recently it becomes a guidance of some efforts to optimalize infants’ growth through stimulation, detection, early growth intervention, and providing of Infant and maternal health Book (Kemenkes RI, 2014). However, in training of growth and development comprehensively and better was not so optimal. The result showed that the implementation of stimulation, detection, early growth intervention is limited to early detection irregularities growth and development that because there are still the less supportive by Community Health Center, the responsible for stimulation, detection, early growth intervention not training, un-socialized yet, facilities inadequate supporting stimulation and primary detection development. The Maternal and infant health books distributed never read by parents at home (Maritalia, 2009).

Based on Riskesdas data where there is a tendency of an increase in the proportion of infants were ages 6-59 month who never weigh in the last 3 years in Indonesia are likely to increase. The increasing occurred from 23.8% in the year 2010 became 34.3% in 2013 (Riskesdas, 2013). This data may result in an increase in the number of infants who experience developmental delay will increase, due to lack of stimulation that is commonly given to infants by health workers or cadres at the Integrated service post (Posyandu). An infant who has an nutrition well and fine would respond environmental changes more active and then accelerate a developmental children. Malnutrition at the age of 0-24 months can cause trouble are sprouting of permanent brain. There was as many as 30,8 % infants aged 6-18 months had a delayed of hard motoric development (Darwati, 2014).
The growth and development of infants need to be stimulated by parents especially maternal so the infants can grow and development optimally and according to the stage of infants’ days (Palasari, 2012). The maternal knowledge about growth and development of infants integrity cause the parents can immediately recognize the developmental process the infants early as possible give stimulation on growing and development to infants who is thoroughly prepared in the physical aspects, mental, and social (Maritalia, 2009).

Based on the recent data from association of Indonesia cellular telecommunication (AICT) showed that the number of customers Smartphone in Indonesia in year 2011 reached 93% (Nugraha, 2012). The development of cell phones currently increase productivity and communication man. Application in a Smartphone cell phone can also be used to help medical activities, like monitoring, the diagnosis and therapy, and the health promoting (Aryan, 2014).

Application of mother cares (MOCA) contains information concerning the monitoring of infant growing and development aged 0-60 months equipped with animation that move on every question the detection and stimulation of development, the The charts growth of WHO standard, the reminder as media to remind parents to perform stimulation and early detection development on appropriate time have specified as well (MOCA team, 2016)

Method

The research done in June-July 2016 at Ibrahim Adjie Bandung Community Health Center the work area used true design experiment, pre-posttest with control group design. This research involved 60 respondents by dividing became of 30 respondents the control group and 30 respondents the intervention group. Sampling techniques were used based on probability sampling in proportional random sampling. Statistical analysis used namely T-test is not paired, mann-whitney test, and test wilcoxon (p< 0.05)

Result

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>group</th>
<th>Intervention (n=30)</th>
<th>Control (n=30)</th>
<th>P Value *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age (Year)</td>
<td></td>
<td></td>
<td></td>
<td>0.420</td>
</tr>
<tr>
<td>&lt; 20</td>
<td></td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>20 – 35</td>
<td></td>
<td>22</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>&gt; 35</td>
<td></td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>2. Occupation</td>
<td></td>
<td></td>
<td></td>
<td>0.739</td>
</tr>
<tr>
<td>Unemployment/house wife worker</td>
<td></td>
<td>24</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>worker</td>
<td></td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
<td></td>
<td>0.340</td>
</tr>
<tr>
<td>SD/SMP/ at the same degree</td>
<td></td>
<td>11</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>SMA/ at the same degree</td>
<td></td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Parity</td>
<td></td>
<td></td>
<td></td>
<td>0.297</td>
</tr>
<tr>
<td>Primi-para</td>
<td></td>
<td>15</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Multi-para</td>
<td></td>
<td>15</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>5. Age of Infants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – 9 month</td>
<td></td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>9 – 12 month</td>
<td></td>
<td>18</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Explanation:
*) Based on Chi-Square test
Table 2. The Score comparative of knowledge before and after the implementing of intervention

<table>
<thead>
<tr>
<th>Knowledge Score</th>
<th>Groups</th>
<th>P Value *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (n=30)</td>
<td>Control (n=30)</td>
</tr>
<tr>
<td>- Pretest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rates (SD)</td>
<td>67,2 (8,1)</td>
<td>66,4 (10,2)</td>
</tr>
<tr>
<td>Median</td>
<td>68</td>
<td>64</td>
</tr>
<tr>
<td>Range</td>
<td>48 – 84</td>
<td>44 – 84</td>
</tr>
<tr>
<td>- Posttest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rates (SD)</td>
<td>81,9 (11,3)</td>
<td>73,1 (11,6)</td>
</tr>
<tr>
<td>Median</td>
<td>86</td>
<td>74</td>
</tr>
<tr>
<td>Range</td>
<td>52 – 92</td>
<td>52 – 96</td>
</tr>
<tr>
<td>The comparative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest vs Posttest ***)</td>
<td>p&lt; 0,001</td>
<td>p = 0,024</td>
</tr>
<tr>
<td>% increase (mean)</td>
<td>22,3%</td>
<td>5,7%</td>
</tr>
</tbody>
</table>

Explanation:
*) T test un-pairs
**) Mann-Whitney test
***) Uji Wilcoxon

Table 3. The Score comparative of skills before and after the implementing of intervention

<table>
<thead>
<tr>
<th>Competency score</th>
<th>Groups</th>
<th>P Value *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (n=30)</td>
<td>Control (n=30)</td>
</tr>
<tr>
<td>- Pre-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rates (SD)</td>
<td>53,8 (23,6)</td>
<td>51,1 (26,8)</td>
</tr>
<tr>
<td>Median</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Range</td>
<td>6 – 88</td>
<td>0 – 100</td>
</tr>
<tr>
<td>- Post-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rates (SD)</td>
<td>87,5 (9,2)</td>
<td>78,7 (14,3)</td>
</tr>
<tr>
<td>Median</td>
<td>88</td>
<td>82</td>
</tr>
<tr>
<td>Range</td>
<td>65 – 100</td>
<td>41 – 94</td>
</tr>
<tr>
<td>The comparative of Pre-test vs Post-test ***)</td>
<td>p&lt; 0,001</td>
<td>p&lt; 0,001</td>
</tr>
<tr>
<td>% increase (mean)</td>
<td>56,6%</td>
<td>41,4%</td>
</tr>
</tbody>
</table>

Explanation:
*) T-test Un-pairs
**) Uji Mann-Whitney
***) Wilcoxon test

Discussion

The research result on Table 1 showed confounding variable on both groups namely age, education, work, and parity has no distinction meaningful (p value > 0,05 ), so the two groups deserved to be compared. The parent’s group of intervention characteristic was dominated by reproductive age with range 20-35 years were as many as 22 people, housewives were 24 people, senior high school education / equivalent 15 people, and a multi-para parity and primi-para were 15 people in each.

The parent’s skills to provide stimulation of growth and development was influenced by age. This is because young parents tend to have lack of knowledge of the growth and development toward their infants. Levels of education of parents was low, it was the risk of delays infant development factor. It was because of knowledge and skills to stimulation was less if it compared with the maternal who has the higher education (Sinto, 2008)

Employment and socio-economic status will also affect a person especially in providing facility required to do an activity (Fatima, 2013). As parents in giving stimulation on infants
also was affected by parity. Parents often do stimulation based on what they have done on their previous first infant (Stevens, 1984).

Based on the Table 2, it was known that the pre-test results variable of knowledge in the intervention and control groups had p_value = 0.738; it means there is no difference meaningful of knowledge beginning about growth and development stimulation between the two groups. At the time post-test was obtained with p_value = 0.002; it showed that there are differences meaningful a score of knowledge in both groups. In the group of intervention, they had an average point and median higher than the control group. An increase in a score of knowledge in the intervention group was the greater than the control group (22.3% vs 5.7%). The results of statistical tests was indicated that MOCA application had a role on increase of knowledge parents about growth and development stimulation of infants aged 6-12 months.

The media application in the providing of information can improve knowledge of someone (Soetjiningsih, 2013). The more in use of sensing in learning, so it will be getting better. The senses are most widely distributed of knowledge to the brain is eyes (87%) (Rohmatika, 2014). When respondents received information of MOCA application, what was remembered of the application is 50% from the sight.

Counseling done by a combination of methods and the media can change knowledge and behavior of respondents. If it was more done by the sensory modality used to receive information, more and more evident the knowledge gained someone (Prasida, 2015). Animation proved significantly able to increase knowledge about information long-term health and effective health provides information compared with pamphlets (Sheba and friends, 2013; Mark and friends, 2010). Mobile online application can increase knowledge individual (Rao et All, 2014). The application of MOCA is guide in the smartphone in that might improve the knowledge better than the other methods that using animated illustration.

Based on Table 3, it can be seen that skills score as pretest in the intervention and control groups have p_value = 0.684; it means there is no significant difference for beginning skills about growth and development stimulation of infants in the two group. At the time posttest obtained p_value = 0.013; it showed that there were significant differences for skills score in both groups. Group of intervention they have an average score and median higher than the control group. An increase in a score of skills in the intervention is the greater than the control group (56.6% vs 41.4%). The results of statistical tests is indicated that MOCA application had a role improved the skills of parents in implementing stimulation of infants growth and development on aged 6-12 months.

The increased of individual skills was started by providing the understanding. Increased of skills can be obtained through the print media, and electronic media (Notoatmodjo, 2010). The smartphone prove to make mother skills in charge of their infants. The importance of parents participation in providing stimulation of infant’s growth and development can be supported by the use of online base program (Sanders and friends, 2016). MOCA application is a guide in smartphone packed in the animated interesting and equipped reminders so can increase mother’s skills in providing stimulation infant’s growth and development.

**Conclusion**

MOCA application can help the program of stimulation, detection, early growth intervention at community as a media alternative and supplements maternal and infants health books used by parents to perform stimulation of infant’s growth and development age 6-12 months independently. Parents can do early detection delay or disorder of growth and development through the application of this, that initial handling can be done more quickly with continued to collaboration with the nearest health workers. The requirement further research to see the other factors that affecting the knowledge and skills of parents in stimulation of growth and development.

**Recognition Acknowledgment**

This research has been supported by various parties. The researcher would like to thank to the team of Mother Cares (MOCA), and CV. Artama selfira as a team of IT who helped making the MOCA application is able to be accessed in a smartphone. Thank you also for all health
workers and cadre in the work area of Ibrahim adjie Bandung Community Health Center, and respondents that had participated and cooperate in this research.

References


The Effect of Delayed Umbilical Cord Clamping on the Hemoglobin Level of Newborn

1 Sri Sumarni*, 2Intan Laily Rahmawati, 3Ngadiyono
1,2,3 Poltekkes Kemenkes Semarang
* marninugroho@yahoo.com

Abstract
Iron deficiency on anemia often occurs in infants with the highest occurrences under 24 months. The effect of anemia in infant links to morbidity and mortality increase rate, impaired the physical and brain growth, motor, mental and intelligence development. Delayed in the umbilical cord cutting might overcome these issues. The aim of this study is to determine the effect of different length of time of delayed umbilical cord clamping and cutting on the hemoglobin level of newborn. This study is a qualitative study. This is an quasi experimental research with post test only control group design. Fifteen newborn babies with delayed umbilical cord clamping and cutting until its stop pulsating as an intervention group. Fifteen newborns have delayed umbilical cord cutting for 120 seconds after birth as a control group. The data from the blood serum were taken afterward for examination of haemoglobin level on the both groups. The data was analysed with t test. The results showed that in the intervention group with delayed umbilical cord clamping and cutting until the umbilical cord stops pulsating has the average time of 218 seconds, with the average of hemoglobin level is 19.76 g/dL. It was higher than the ones in control group at 18.31 g/dL. There is a significance difference in the mean hemoglobin levels between the two groups with p value at 0.001 (<0.05). The different mean of the level of haemoglobin is 1.44. It is concluded that the haemoglobin level at newborn who delayed umbilical cord clamping and cutting until the umbilical cord stop pulsating is higher than of its at newborn who delayed umbilical cord cutting at 120 seconds. The health providers might concern on another factors affecting the level of haemoglobin at newborn.

Key words: Delayed cutting, hemoglobin, Umbilical cord

Introduction
One cause of infant mortality rate in Indonesia is infection, including respiratory infection and diarrhea. Based on a study in Mexico, the highest prevalence of anemia occurs on children under one year old is 14.6%, between 1 and 2 years is 48.9%, between 5 and 11 years 14.6 to 22%. (1). The prevalence rate of anemia in the world is one of the highest rank health issues. The ones who are highly infected are categorized as follow: babies and children under 2 years old (48%), pre-school children (25%), pregnant mother and elderly (50%). (2)

Iron-deficiency anemia for babies is a health issue which can be found in every developing country, especially, baby under 2 years. It might correlate with the inadequacy of iron supplies which may disturb the growth and development. The iron-deficiency anemia problem on baby is a serious health issue because it will disturb the mental and cognitive development of the baby in his/her adult life.

A delay of umbilical cord cutting might help the problem. The baby might add the iron at around 40-50 mg/kg during labour process. This might prevent iron-deficiency until the baby reaches one year old. (3) A delay of clamping and cutting of the umbilical cord means delaying for a moment to perform the clamping and cutting of the umbilical cord or preventing of clamping the umbilical cord early (Riksani Ria, 2010). For the delay time, even WHO (2007) recommends it. WHO states that the optimal time to perform the clamping and cutting of the umbilical cord for every baby, without considering gestational age and the infant’s weight, is when the circulation or pulsation in the umbilical cord has stopped and the umbilical cord looks horizontal. Which is estimate around 3 minutes after the baby is born. (4,5)
A study stated that there is a significant difference of the average of hemoglobin level in newborn babies. Where the average of hemoglobin level for newborns whose umbilical cord clamping performed about 60-120 seconds is higher than the ones performed about 30-60 seconds. Furthermore, a similar research was done by Dr. Manju Bala Dash, et al in 2014 that there is a significant difference in hemoglobin level between the time when the baby was born and 24 hours after the baby was born. Between the babies which are given an intervention of a delayed the umbilical cord cutting around 15 seconds and 3 minutes. Babies who are given a delayed their umbilical cords cutting have a higher hemoglobin level compared to the ones experiencing an early cutting or directly of their umbilical cords.

According to the procedure of Asuhan Persalinan Normal/ Normal Labour Procedure Guidance 2010, in point 30, that “two minutes after postpartum, clamp the umbilical cord with a clamp about 3cm from the baby’s navel. Push the remains of the content in the umbilical cord toward the distal (maternal) and clamp it again about 2cm distal from the first clamp.”

Placenta is an organ shaped like a particular disc attached on cervix and connected to the fetus through umbilical cord. It contains components of the fetus, and components of the mother. It consists of the fetal tissue and the mother tissue is completely formed at 16 weeks or 4 months of pregnancy. The most important gase exchange is oxygen and carbondioxide. The oxygen saturation in the intervillion part of the placenta is 90%, meanwhile the partial pressure is 90 mmHg. Although the PO2 pressure on fetus only 25 mmHg, high hemoglobin on fetus allows the absorption of oxygen from the placenta. In addition, the difference in H+ ions and high levels of carbon dioxide from the fetal circulation allows exchange with oxygen (bohr effect). Meiliya, E & Karyuni, E.K. (2007) stated that as long as the placenta sticks on the cervix, the umbilical cord will produce blood, which is called the umbilical cord blood. The blood will not be produced for a long time. After the placenta is detached and there is no pulsation on the umbilical cord, the bloodstream from the umbilical cord will also stop. Once the fetus is born, it no longer needs oxygen from the mother, because it can breathe on its own. Therefore it is no longer needed, so that this cord must be cut and clamped or fastened. (12)

In normal birth, the delayed of cord clamping is done until the umbilical cord stops pulsating. Lotus birth is a practice when they do not do the clamping and cutting the umbilical cord, and this cord dislodged itself. When the baby begins to breathe and reaches the normal blood circulation volume, the cord will stop pulsating (the cord will look white and soft). It can take about 3 to 7 minutes for the baby to transition and to form a normal volume of blood in his body physiologically, but this process can take longer for some babies. WHO states that the optimal time to clamp the umbilical cord for all infants, regardless of gestational age or fetal weight. It happens when the circulation or pulsation in the umbilical cord stopped, and the umbilical cord is flat and pulseless (about 3 minutes or more after birth). There are several factors affecting hemoglobin level in newborn including maternal hemoglobin level, maternal age, parity, gestational age, multiple pregnancy, birth weight, blood loss, and co-morbidities in pregnancy. (5)

The aim of this study is to identify the characteristic of postpartum mother, the hemoglobin levels on newborn baby, and analyse the average of hemoglobin levels on newborn baby in the intervention group and control group.

Method
This study is pre-experimental design with post only control group design. This quantitative study is a cross-sectional approach. The subject was recruited from two midwifery independent clinical practice at Semarang during 3 months at 2017. The number of sample used a Slovin pattern. The sampling technique was a purposive sampling. All subject involving in this study were normal labour women who deliver their normal baby. Using Slovin Pattern on the number of subject, there were 16 babies as intervention group and 15 babies as control group. During the study a subject withdraw because of unwanted to be as a participant. Both two group were observed from delivery process until the third stage of labour.
There were 4 enumerators helping this study. The observation made from the third stage of labor, which is delaying on cutting of the umbilical cord until it stopped pulsating at midwifery clinic A as an intervention group. Midwives calculated the duration of the pulsation of the umbilical cord. It used a digital timer with a Tech-Up brand with number 67540000MN. After the cord stopped pulsating, the researcher clamped and cut the umbilical cord. A droplet of blood, ± 0.05 out of the remains of the umbilical cord cut is used to measure hemoglobin (Hb) level using digital hemoglobin with brand Tech Up. The data were noted from the results of the time of the umbilical cord pulsating stopped and the hemoglobin (Hb) levels. In the control group, the blood sample were gained from 120 minutes delayed cord cutting at midwifery clinic B.

The normality of data was using the shapiro-wilk test because of less than 50 subjects. The data were analysed by univariate and bivariate with descriptive statistic which is used to report result in frequency distribution and percentage (%). The univariate analysis is presented as mean, median, minimum, maximum, and standard deviation. Then, the bivariate analysis was using t-test.\(^{(13)}\)

### Results

#### Table 1. Characteristics of the postpartum women, data normality, and homogeneity data.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Group</th>
<th>Category</th>
<th>f</th>
<th>%</th>
<th>p*</th>
<th>p* SapiroW</th>
<th>p* homo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Age</td>
<td>Intervention</td>
<td>20-27 years</td>
<td>10</td>
<td>66.6</td>
<td>0.310</td>
<td>0.278</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>28-35 years</td>
<td>5</td>
<td>33.3</td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>20-27 years</td>
<td>10</td>
<td>66.7</td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>28-35 years</td>
<td>5</td>
<td>33.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>Intervention</td>
<td>Housewife</td>
<td>6</td>
<td>40</td>
<td>0.001</td>
<td>0.889</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>private</td>
<td>9</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Civil servant</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>Housewife</td>
<td>4</td>
<td>26.7</td>
<td>0.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private</td>
<td>3</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Civil servant</td>
<td>8</td>
<td>53.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Intervention</td>
<td>Elementary</td>
<td>11</td>
<td>73.4</td>
<td>0.001</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior-Senior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>high school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>Elementary</td>
<td>4</td>
<td>26.6</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior-Senior</td>
<td>4</td>
<td>26.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>high school</td>
<td>8</td>
<td>53.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate</td>
<td>3</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>Intervention</td>
<td>Primipara</td>
<td>5</td>
<td>33.3</td>
<td>0.001</td>
<td>0.224</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multipara</td>
<td>10</td>
<td>66.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>Primipara</td>
<td>7</td>
<td>46.7</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multipara</td>
<td>8</td>
<td>53.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gestational Age</td>
<td>Intervention</td>
<td>37-41 weeks</td>
<td>15</td>
<td>100.0</td>
<td>0.059</td>
<td>0.924</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>37-41 weeks</td>
<td>15</td>
<td>100.0</td>
<td>0.009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse</td>
<td>Intervention</td>
<td>80-100x/minutes</td>
<td>15</td>
<td>100.0</td>
<td>0.017</td>
<td>0.740</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>80-100x/minutes</td>
<td>15</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Intervention</td>
<td>36.5-37°C</td>
<td>15</td>
<td>100.0</td>
<td>0.210</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>36.5-37°C</td>
<td>15</td>
<td>100.0</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiration Rate</td>
<td>Intervention</td>
<td>18-24 x/minutes</td>
<td>15</td>
<td>100.0</td>
<td>0.089</td>
<td>0.331</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>18-24 x/minutes</td>
<td>15</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The postpartum women aged 20-27 years in the intervention and control group amounted to 10 people each (66.6%), while the subjects aged 28-35 years same as in both group amounted to 5 people each (33.4%). The level of education in the intervention is lower than the level of education in the control group. Most women are multipara in both groups. All subject have an upper arm circumference length more than 23 cm.

Job characteristics in the intervention group consist of 15 subjects, with 6 subjects (40%) Housewife, and 9 subjects (60%) work as employees of private companies. In the control group, there are 4 subjects (26.7%) who are Housewife, 3 subjects (20.0%) work as employees of private companies and 8 subjects (53.35) work as civil servants. In the intervention and control group, all 30 subjects (100.0%) had a gestational age of ≥37 - ≤41 weeks as aterm pregnancy. The the results of vital signs examination and observation, upper arm circumference length, fetal heart rate, and birth weight of the infant are in a normal state.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Group</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Characteristic</td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>1</td>
<td>Duration of Delayed Umbilical Cord Cutting</td>
<td>218.3</td>
<td>220.0</td>
</tr>
<tr>
<td>2</td>
<td>Haemoglobin Level</td>
<td>19.760</td>
<td>19.600</td>
</tr>
</tbody>
</table>

The average duration of delay time on cutting the umbilical cord until the umbilical cord stop pulsating is about 218.3 seconds or about 3.5 minutes. The haemoglobin level is 19.76 gr/dl. While in the control group, it is 18.313 gr / dl. This result is almost the same as that of Lubis, Muara.P in Medan in 2008 entitled "The Impact of Umbilical Cord Clamping Delays on Hemoglobin and Hematocrit Increase of Infant in Normal Delivery" which one of the results is the hemoglobin level in infant with a delay cutting the umbilical cord after about 2 minutes is around 18.3 g/dL.
The results of statistical examination using parametric Un-Paired T-Test, obtained p-value = 0.001 (<0.05). There is a difference of Hb (Hemoglobin) level in newborn between the group with delayed umbilical cord cutting until the umbilical cord stops pulsating and the one with delay of umbilical cord cutting after 2 minutes. The difference mean of haemoglobin (Hb) level in intervention and control group is 1.4g/dl

Discussion

From the results of the above research it can be seen some characteristics of subjects ranging from the age of subjects to weight newborn baby. High parity in pregnant women will cause effects, one of them is anemia in infants who are born.\(^{(14)}\) The education level and age of a woman are concerned with the health of her pregnancy, as women tend to delay the age of pregnancy even up to the age of 40, for reasons such as education, professional work, and economics. Furthermore age and parity are influential, because pregnant women at age\(\geq\) 35 years are related to preeclampsia, premature birth, LBW, and cesarean section. It also in pregnancy during <20 years of age may cause anemia.\(^{(15)}\) All subject have an upper arm circumference length more than 23 cm. It is indicated that they are good nutritional status.

The duration of umbilical cord delay in the intervention group was 218 seconds or 3.5 minutes. This result is compatible with the recommendation from Emhamed, et al (2004), whose research in Libya recommends on clamping and cutting the umbilical cord after the cord stops pulsating, i.e. after 2 - 4 minutes.\(^{(16)}\) Meanwhile in the control group, it is 120 seconds or for 2 minutes. With results in the intervention group state the hemoglobin level of newborns is 19.76 g/dL. These results are almost similar compared with the results of research from DR.Manju entitled “Effect of Delayed Cord Clamping on Hemoglobin Level among Newborns in Rajiv Gandhi Government Women & Children Hospital, Puducherry” in 2014. In DR. Manju’s research, stated that the group that performed the cutting of the umbilical cord for 3 minutes had an average Hb (Hemoglobin) level of 19.97 g/dL.\(^{(7)}\) While the mean hemoglobin level in the control group was 18.3 g / dl This result is almost the same as that of Lubis, Muara.P in Medan in 2008 entitled "The Impact of Umbilical Cord Clamping Delays on Hemoglobin and Hematocrit Increase of Infant in Normal Delivery" which one of the results is the hemoglobin level in infant with a delay cutting the umbilical cord after about 2 minutes is around 18.3 g/dL.\(^{(17)}\)

It is a need for health provider to concern another factor influencing level of haemoglobin on newborn for practising the delay cord clamping and cutting. Some factors, especially nutrional status of the pregnant woman might influence on the level of the newborn. The pregnant women might be supported to consume much vegetable, such as daun kacang panjang to improve their level of haemoglobin.\(^{(18)}\)

Autoimmune of the fetus might correlate with the delay of umbilical cord clamping and cutting. Woman who has different rhesus with the baby might in the dangerous state if they were delayed umbilical cord clamping, because of autoimmunized of bloodstream.
Conclusion

From the research findings above, it can be concluded that most of the subjects from both control and intervention groups aged 20-27 years. Most of the subjects are housewives and employees of private companies. All 30 subjects are mostly educated from Junior to senior High School. Most of them are multipara. The average gestational age of the respondent is 37-41 weeks. The results are from examination and monitoring of vital signs, fetal heart rate, upper arm circumference length and maternal Haemoglobin of all subjects and their babies under normal circumstances. The average birth weight of infants born by maternal subjects has a normal weight of> 2500 g and <4000 g.

The delay of umbilical cord cutting until the umbilical cord stops pulsating has the average time of 218 seconds, with mean hemoglobin level of newborns in intervention group is 19.76g /dL. It is higher than the ones in control group at only 18.31 g/dL with value of difference of mean 1.44.

Acknowledgement

This study gained an approval letter or Ethical Clearance from Health Research Ethics Committee of Poltekkes Kemenkes Semarang with reference number 283 / KEPK / Poltekkes-SMG / EC / 2016. The writer thanks to all subject’ family, midwive colleagues, and all people who helping to the manager of the midwifery clinical practice and finishing the study.

References

Committee on Obstetric Practice of The American of Pediatric. 2012.
Effect Of Reinforcing Factor To Perspective of the Nursing Mothers Against Breastfeeding Exclusive In Genuk’s Primary Health Care

1Elisa Ulfiana*, 2Endri Astuti
Program Studi DIV Kebidanan Semarang Jurusan Kebidanan Semarang Poltekkes Kemenkes Semarang
*Email : my_ulep@yahoo.com

Abstract
The result of Indonesian Demographic Health Survey (SDKI) Infant Mortality Rate (IMR) from 2007 to 2012 decreased by 32/1000 live births. But not achieve yet the MDGs target by 2015 amounted 23/1000 live births. In order to reduce morbidity and mortality of children, UNICEF and WHO recommends exclusive breastfeeding program. Data from Genuk Health Center Semarang City about the scope of exclusive breastfeeding in 2014 as much as 29.43% is still far from the target (55%). The purpose of this research to determine the effect of reinforcing factors in perspective breastfeeding mothers to exclusive breastfeeding in the Genuk Health Center. This research is a quantitative research using research design correlation with cross sectional approach. The population in this study are breastfeeding mothers at Genuk Health Center, Semarang. Samples are 63 respondents breastfeeding mother with a sampling technique using total sampling. The result showed that good husband support is 37 respondents (60,6%), good midwife support is 31 respondents (50,8%), public figure support is 31 respondents (50,8%), good partner support is 35 respondents (57,4%) in the exclusive breastfeeding. Bivariate test showed there is no relationship between a husband (p value = 0.295), midwife (p value = 0.6), friend (p value = 0.184) with exclusive breastfeeding. There is a relationship between public figure (p value = 0.008) and the fourth reinforcing (p value = 0.034) with exclusive breastfeeding. Multivariate analysis showed that the public figure have the most powerful influence on exclusive breastfeeding. From the results of this research are expected by the several reinforcing factors be the way to increase milk production for mothers, to improve the achievement of exclusive breastfeeding and data sources for further development of midwifery research.

Key words: Reinforcing Factor, Exclusive breastfeeding

Introduction
Infant Mortality Rate (IMR) in Indonesia according to Indonesia Demographic Health Survey (SDKI) in 2012 is 32/1000 live birth, it has decreased when compared to 2007 that is 34/1000 live birth. However, the Infant Mortality Rate (IMR) is still far from the Millennium Development Goals (MDGs) target that must be achieved by 2015, namely AKB 23/1000 live birth.

In order to reduce morbidity and mortality, the United Nation Childrens Fund (UNICEF) and the World Health Organization (WHO) recommends that children should only breastfeed for at least six months. Supplementary feeding should be given after 6 months of age, and breastfeeding continues until the child is two years old (WHO, 2005). The coverage of exclusive ASI in Central Java has increased from year to year, from 45.86% in 2011 and 49.96% in 2012 and in 2013 to 57.67%. However, exclusive ASI coverage in central Java is very far from the target of 80%.

Based on data sources obtained from Genuk Public Health Center Semarang City in 2014 is still far from the target (55%) that is only 29.43%, and 2015 the coverage level of exclusive breastfeeding is still low (Genuk PHC Profile, 2015).
Based on these data then the problem of the coverage of exclusive breastfeeding achievement can be caused by several factors that can be studied one of them through factors that affect behavior. The behavioral theory used in this study is Theory of Lawrence Green. According to Lawrence Green Theory (1991), a person's or society's health is influenced by two main factors, namely behavior factors and non behavioral factors. Furthermore, the behavior itself is determined or formed from 3 factors, namely predisposing factors, enabling factors, reinforcing factors. Reinforcing factors include attitudes and behaviors of health workers, community leaders, religious leaders, parents or other officers who are a reference group of community behavior.

Seen from Yuyun's research result in 2013, there was a significant relationship between husband support and breastfeeding mother with exclusive breastfeeding practice in Ngemplak Simongan Health Center with p value = 0.007 (<0.05) and value of x2 count = 7.172 ≥ x2 table = 3.841.

Based on the above description, see still far coverage of achievement of exclusive breastfeeding from target and previously never done research about Influence Reinforcing Factor in Perspective of Breastfeeding Mother to Exclusive Breastfeeding in Genuk Public Health Center. Therefore, the authors are interested to examine the effect of reinforcing factor in breastfeeding ladies' perspective on exclusive breastfeeding in Genuk Public Health area.

Method

This research use quantitative approach; cross sectional approach. Sampling technique in this research is Non Probability Sampling that is saturated sample. The population of this research is breastfeeding mother at Genuk Public Health Center, Semarang City by using total sampling technique with 63 respondents of breastfeeding mother. The tools used to collect data in this study using the Questionnaire Sheet. The questionnaire contained: Mothers breastfeeding perception of the effect of parental support on breastfeeding. Breastfeeding mother's perception about the influence of husband support in the perspective of breastfeeding mothers against breastfeeding. The perception of breastfeeding mothers about the influence of attitudes of health workers in breastfeeding. The perception of breastfeeding mothers about the influence of the attitude of community leaders in breastfeeding. The perception of breastfeeding mothers about the influence of friend's attitude in breastfeeding. Breastfeeding perception of reinforcing factors most influential on exclusive breastfeeding in Genuk Public Health Center area.

Results and Discussion

a. Univariate Analysis

Reinforcing factors for exclusive breastfeeding

According to the Ministry of Health of the Republic of Indonesia in 2010 about the importance of breastfeeding especially exclusive breastfeeding for babies is extraordinary. For babies, exclusive breastfeeding is the most nutritious food suitable for the baby's needs, protecting babies from various diseases. Exclusive breastfeeding may also reduce infant mortality from childhood diseases such as diarrhea, respiratory infections and other infectious diseases, so exclusive breastfeeding is part of optimal and very important breastfeeding practice (UNICEF, 2008).

According to Lawrence Green and his colleagues (1980) the reinforcing factors include the attitudes of husbands, family attitudes, friend attitudes, attitudes of health workers, community leaders, and religious leaders. In this study, support for lactating factors in breastfeeding ladies’ perspectives included support from husbands in breastfeeding, support of health workers (midwives) in breastfeeding, support of community leaders in breastfeeding, peer or friends support in breastfeeding. The Reinforcing factor in the perspective of breastfeeding mothers in exclusive breastfeeding is divided into two categories: good and bad.
Table 1 Reinforcing factors for exclusive breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Reinforcing factors</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>37</td>
<td>60.7</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>24</td>
<td>39.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on table 1 the results showed that the strengthening factor in the perspective of breastfeeding mothers in exclusive breastfeeding exclusively amounted to 37 (60.7%). While the Reinforcing factor in breastfeeding mother’s perspective in exclusive breastfeeding that’s not good is 24 (39.3%).

Husband’s support in breastfeeding

The seminar commemorating World Breastfeeding Week 2008 put forward many factors that become problem of low breastfeeding in Indonesia, one of the supporting factors is the husband, the one who is the closest person who plays a key role during pregnancy, labor and after the baby is born including breastfeeding. Support provided by the husband will affect the psychological condition of the mother that will impact on the success of breastfeeding. The husband is contributing factor for the emotional and psychological activity that is given to the breastfeeding mother. According to the theory of Lawrance Green and his friends (1980) one of the reinforcing factor is the husband. Seen from Ramadhani’s research results in 2010, 55.4% of mothers gave exclusive breastfeeding and 57% of mothers said their husbands supported exclusive breastfeeding.

Table 2 Support of husbands in exclusive breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Husband’s Support</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>37</td>
<td>60.6</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>24</td>
<td>39.4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 2 the results showed that the support of a good husband amounted to 37 (60.6%). While the husband support is not good for 24 (39.4%).

Questions for husbands’ support about exclusive breastfeeding consist of 17 questions, detailed answers to respondents' questions according to the researcher's analysis as follows:

Table 3 Distribution of Respondents' Answer based on Husband Support

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>F</th>
<th>%</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The husband provides information about exclusive breastfeeding</td>
<td>42</td>
<td>68.9</td>
<td>19</td>
<td>31.1</td>
</tr>
<tr>
<td>2</td>
<td>Husband forbids me from searching for Exclusive Breastmilk information</td>
<td>56</td>
<td>91.8</td>
<td>5</td>
<td>8.2</td>
</tr>
<tr>
<td>3</td>
<td>Husband provides information on how to give exclusive breastfeeding</td>
<td>42</td>
<td>68.9</td>
<td>19</td>
<td>31.1</td>
</tr>
<tr>
<td>4</td>
<td>Husband provides exclusive breastfeeding benefits information</td>
<td>41</td>
<td>67.2</td>
<td>20</td>
<td>32.8</td>
</tr>
<tr>
<td>5</td>
<td>The husband asked the midwife about exclusive breastfeeding</td>
<td>37</td>
<td>60.7</td>
<td>24</td>
<td>39.3</td>
</tr>
<tr>
<td>No</td>
<td>Question</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------</td>
<td>----</td>
<td>------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>Midwives provide information on exclusive breastfeeding</td>
<td>58</td>
<td>95.1</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>2</td>
<td>Midwives forbid me to seek Exclusive Breastmilk information</td>
<td>54</td>
<td>88.5</td>
<td>7</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>Midwives provide information on how to give exclusive breastfeeding</td>
<td>58</td>
<td>95.1</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>4</td>
<td>Midwives provide information on the benefits of exclusive breastfeeding</td>
<td>56</td>
<td>91.8</td>
<td>5</td>
<td>8.2</td>
</tr>
<tr>
<td>5</td>
<td>Midwives provide leaflets about exclusive breastfeeding</td>
<td>31</td>
<td>50.8</td>
<td>30</td>
<td>49.2</td>
</tr>
<tr>
<td>6</td>
<td>Midwives respond well when discussing exclusive breastfeeding</td>
<td>60</td>
<td>98.4</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>7</td>
<td>The midwife is indifferent whenever I'm talking about breastfeeding</td>
<td>57</td>
<td>93.4</td>
<td>4</td>
<td>6.6</td>
</tr>
<tr>
<td>8</td>
<td>Midwives provide suggestions and solutions whenever I convey a problem about breastfeeding</td>
<td>59</td>
<td>96.7</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>9</td>
<td>Midwives provide free breastfeeding counseling services</td>
<td>59</td>
<td>96.7</td>
<td>2</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Based from the distribution of husband support above, most of respondents have got support from their husband. It’s prove that most respondent husbands serve as a place to devote all concern feelings about difficulties breastfeeding as much as 96.7%, husbands respondents who not forbid to seek information about exclusive breastfeeding as much as 91.8%, husbands respondents have provided good support when discussing with respondents about exclusive breastfeeding as much as 91.8%, and followed by husband respondents who reminded respondents to consume foods that increase milk production as much as 91.8%. However, some of the respondent’s husband who did not initiative asked the midwife about exclusive breastfeeding as much as 39.3%. Husband advised and asked to follow the counseling and health education about exclusive breastfeeding in community Health centers (Puskesmas) or the surrounding environment as much as 37.7%. Husband facilitate the need to follow the counseling about the importance of exclusive breastfeeding as much as 37.7%. The husband who not participate to deliver health education about exclusive breastfeeding as much as 36.1%.

1. Midwife support in breastfeeding.
Midwife support to breastfeeding mothers about exclusive breastfeeding divided into 2 categories namely; good and not good.

<table>
<thead>
<tr>
<th>No</th>
<th>Midwife Support</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>31</td>
<td>50.8</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>30</td>
<td>49.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 4 the results showed that midwives who support to exclusive exclusive breastfeeding are about 31 (50.8)%. Besides, midwives who support against exclusive breastfeeding that’s not good are about 30 (49.2)%.

Questions for midwife support about exclusive breastfeeding consist of 18 questions, detailed answers to respondents’ questions according to the researcher’s analysis as follows:
Table 5 Distribution of Respondents’ Answer based on Midwife Support to Breastfeeding Mothers about Exclusive Breastfeeding

From the results according to the distribution question items, some respondents answered that the midwife reminded to consume foods that increase milk production by 100%, followed by the midwife gave a good response when discussing about exclusive breastfeeding as much as 98.4%, and the midwife reminded to not stress to keep breastmilk production as much as 98.4%.

1. Support Community Leaders in breastfeeding.

Support of community leaders on breastfeeding mothers about Exclusive Breastfeeding is divided into two categories: good and bad.

Table 6 Community Promoter Support in breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Support of community leaders</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>31</td>
<td>50.8</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>30</td>
<td>49.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 6 the results showed that the support of community leaders in exclusive breastfeeding is good as much as 31 (50.8%). While the support of community leaders in exclusive breastfeeding is not good as much as 30 (49.2%).

Questions for the support of community figures on Exclusive Breastfeeding consists of 17 questions, detailed answers to the questions respondents according to the researcher's analysis are as follows:

Table 7 Distribution of Respondents’ Responses based on Community Promotion Support to Breastfeeding Mothers about Exclusive Breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>F</th>
<th>%</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>the village head's mother provided information on exclusive breastfeeding.</td>
<td>29</td>
<td>47.5</td>
<td>32</td>
<td>52.5</td>
</tr>
<tr>
<td>2</td>
<td>the village head's mother forbid me to seek Exclusive Breastfeeding information</td>
<td>55</td>
<td>90.2</td>
<td>6</td>
<td>9.8</td>
</tr>
<tr>
<td>3</td>
<td>the village head's mother provides information on how to give exclusive breastfeeding</td>
<td>30</td>
<td>49.2</td>
<td>31</td>
<td>50.8</td>
</tr>
<tr>
<td>4</td>
<td>the village head's mother provides exclusive breastfeeding benefits information</td>
<td>29</td>
<td>47.5</td>
<td>32</td>
<td>52.5</td>
</tr>
<tr>
<td>5</td>
<td>the village head's mother provides exclusive breastfeeding leaflets</td>
<td>51</td>
<td>83.6</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td>6</td>
<td>the village head's mother gave a good response when discussing exclusive breastfeeding</td>
<td>38</td>
<td>62.3</td>
<td>23</td>
<td>37.7</td>
</tr>
<tr>
<td>7</td>
<td>the village head's mother is indifferent whenever I'm talking about breastfeeding</td>
<td>44</td>
<td>72.1</td>
<td>17</td>
<td>27.9</td>
</tr>
<tr>
<td>8</td>
<td>the village head's mother provides suggestions and solutions whenever I convey a problem about breastfeeding</td>
<td>36</td>
<td>59.0</td>
<td>25</td>
<td>41.0</td>
</tr>
<tr>
<td>9</td>
<td>the village head's mother mothers rarely has free time to discuss with me about breastfeeding problems</td>
<td>36</td>
<td>59.0</td>
<td>25</td>
<td>41.0</td>
</tr>
<tr>
<td>10</td>
<td>the village head's mother suggested and asked me to follow the counseling and health education about exclusive breastfeeding consumption at community health centre and surrounding areas</td>
<td>35</td>
<td>57.4</td>
<td>26</td>
<td>42.6</td>
</tr>
</tbody>
</table>
the village head's mother facilitated my need to follow the counseling about the importance of exclusive breastfeeding 14 23.0 47 77.0
the village head's mother did not take me to health education about exclusive breastfeeding 24 39.3 37 60.7
When I got home I brought formula milk home 43 70.5 18 29.5
the village head's mother reminds me to consume foods that increase breastmilk production 26 42.6 35 57.4
the village head's mother is the place for me to devote all the worries about the difficulties of exclusive breastfeeding breastfeeding.
the village head's mother reminds me not to stress to increase my breastmilk production. 29 47.5 32 52.5

2. Friend's Support in Breastfeeding.

Friend's support for breastfeeding mothers about Exclusive Breastfeeding is divided into two categories: good and bad.

Table 8 Partner support in Breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Partner support</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>35</td>
<td>57.4</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>26</td>
<td>42.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on table 8 the results showed that the support of friends in exclusive exclusive breastfeeding as much as 35 (57.4%). While the unsupported friends in exclusive breastfeeding as much as 26 (42.6%).

Questions for the support of friends about exclusive breastfeeding consists of 17 questions, detailed answers to the questions respondents according to the researcher's analysis as follows:

Table 9 Distribution of Respondents' Answer based on Friend's Support to Breastfeeding Mothers about Exclusive Breastfeeding.

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>F</th>
<th>%</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Friends provide information about exclusive breastfeeding</td>
<td>47</td>
<td>77.0</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>2</td>
<td>Friends forbid me to seek Exclusive Breastmilk information</td>
<td>51</td>
<td>83.6</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td>3</td>
<td>Friends provide information on how to give exclusive breastfeeding</td>
<td>46</td>
<td>75.4</td>
<td>15</td>
<td>24.6</td>
</tr>
<tr>
<td>4</td>
<td>Friends provide exclusive breastfeeding benefits information</td>
<td>50</td>
<td>82.0</td>
<td>11</td>
<td>18.0</td>
</tr>
<tr>
<td>5</td>
<td>Friends give exclusive breastfeeding leaflets</td>
<td>15</td>
<td>24.6</td>
<td>46</td>
<td>75.4</td>
</tr>
<tr>
<td>6</td>
<td>Friends give a good response when discussing exclusive breastfeeding</td>
<td>56</td>
<td>91.8</td>
<td>5</td>
<td>8.2</td>
</tr>
<tr>
<td>7</td>
<td>My friend is indifferent whenever I'm talking about breastfeeding</td>
<td>52</td>
<td>85.2</td>
<td>9</td>
<td>14.8</td>
</tr>
<tr>
<td>8</td>
<td>Friends provide suggestions and solutions whenever I raise a problem about breastfeeding</td>
<td>52</td>
<td>85.2</td>
<td>9</td>
<td>14.8</td>
</tr>
<tr>
<td>9</td>
<td>Friends rarely have free time to discuss with me about breastfeeding problems</td>
<td>41</td>
<td>67.2</td>
<td>20</td>
<td>32.8</td>
</tr>
<tr>
<td>10</td>
<td>Friends advised and told me to follow the counseling and health education about exclusive breastfeeding consumption in puskesmas and</td>
<td>33</td>
<td>54.1</td>
<td>28</td>
<td>45.9</td>
</tr>
</tbody>
</table>
surrounding areas

Friends facilitate my need to follow the counseling about the importance of Exclusive Breastfeeding. 59 96.7 2 3.3

Friends did not take me to health education about Exclusive Breastfeeding. 53 86.9 8 13.1

Friends feeding me formula for my baby. 54 88.5 7 11.5

Friends advised me to give formula to my baby aged 0-6 months. 42 68.9 19 31.1

Friends remind me to consume foods that increase milk production 54 108 7 11.5

A friend is a place for me to devote all the worries about the difficulty of exclusive breastfeeding. 53 86.9 8 13.1

Friends remind me not to stress to increase my breastmilk production 54 88.5 7 11.5

From the distribution results according to the question items, some respondents answered that the Friends facilitated their need to follow the counseling about the importance of Exclusive Breastfeeding as much as 96.7%, followed by good friends when discussing exclusive breastfeeding 91.8%.

3. The frequency distribution of exclusive breastfeeding behavior

Exclusive Breast-feeding Behavior is categorized into 2 ie respondents who give exclusive breastfeeding and who that's not give exclusive breastfeeding.

Table 10 Distribution of Respondents by Exclusive Breastfeeding Behavior in Genuk Public Health Centers of 2016

<table>
<thead>
<tr>
<th>Give Exclusive Breastfeeding</th>
<th>Yes Exclusive</th>
<th>No Exclusive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>F N</td>
<td>23 37.7</td>
<td>38 62.3</td>
<td>61 100</td>
</tr>
</tbody>
</table>

Based on Table 10 the results of the research, found that respondents who did not give exclusive breastfeeding as much as 38 respondents (62.4%) and more than those who give exclusive breastfeeding only 23 respondents (37.7%).

a. Bivariate Analysis

1. Husband's relationship to the wife about exclusive breastfeeding

In respondents who gave exclusive breastfeeding supported by more husbands that is as much as 43.6%, and 29.2% of respondents are not supported either by her husband. While the non-exclusive breastfeeding respondents received good support from husband as much as 56.8% and who did not get good support from the husband more that is 70.8%. To see the relationship of husband's support to wife about exclusive breastfeeding can be seen in the following table:

Table 11 Relationship of Husbands Support to Wives About Exclusive Breastfeeding

<table>
<thead>
<tr>
<th>No</th>
<th>Husband's Support</th>
<th>Exclusive Breastfeeding</th>
<th>Not Exclusive Breastfeeding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>Good</td>
<td>16</td>
<td>43.26</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>7</td>
<td>29.2</td>
<td>17</td>
</tr>
</tbody>
</table>

P = 0.295
Based on the results of statistical tests with significance level of 5% X2 test results, p value of 0.295 this proves that there is no relationship between husband support to wife about exclusive breastfeeding (p > 0.05).

2. Midwife's relationship to exclusive breastfeeding

The respondents who gave exclusive breastfeeding were supported by more midwives, 41.9%, and 33.3% of respondents were not supported either by the midwife. While the non-exclusive breastfeeding respondents received good support from midwives as much as 58.1% and who did not get good support from midwives more that is 66.7%. To see the relationship of midwife support to exclusive breastfeeding can be seen in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Midwife’s Support</th>
<th>Exclusive Breastfeeding</th>
<th>Not Exclusive Breastfeeding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>1</td>
<td>Good</td>
<td>13 41.9</td>
<td>18 58.1</td>
<td>31 10</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>10 33.3</td>
<td>20 66.7</td>
<td>30 10</td>
</tr>
</tbody>
</table>

P = 0.600

Based on the results of statistical tests with the significance level of 5% X2 test results, p value of 0.600 this proves that there is no relationship between midwife support to exclusive breastfeeding (p > 0.05).

3. Relationship of public figures to exclusive breastfeeding

The respondents who gave exclusive breastfeeding were supported by more community leaders, 54.8%, and 20.0% of respondents were not supported by community leaders. While the respondents who are not exclusively breastfed get good support from community leaders as much as 45.2% and who do not get good support from community leaders more that is 80.0%. To see the relationship of support of community leaders to exclusive breastfeeding can be seen in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Community Figure</th>
<th>Exclusive Breastfeeding</th>
<th>Not Exclusive Breastfeeding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>1</td>
<td>Good</td>
<td>17 54.8</td>
<td>14 45.2</td>
<td>31 100</td>
</tr>
<tr>
<td>2</td>
<td>Not Good</td>
<td>6 20.0</td>
<td>24 80.0</td>
<td>30 100</td>
</tr>
</tbody>
</table>

P = 0.008

Based on the results of statistical tests with the significance level of 5% X2 test results, p value of 0.008 this proves that there is a relationship between support of community leaders to exclusive breastfeeding (p value <0.05).

Support of public figures on Green theory is one of the reinforcing factors or factors that encourage or strengthen behavior. To get good support for breastfeeding, it is suggested that there are factors that encourage to increase mother's knowledge, mother's morale, and mother's belief to give exclusive breastfeeding that can be obtained from information sources: midwives, doctors, nurses, friends, husbands, posyandu cadres, dasawisma, PKK, and media. Therefore, to improve the attitude of respondents to exclusive breastfeeding support that is still not good in order to be good the necessary stimulus-stimulus on a regular basis. The support of good community leaders towards exclusive breastfeeding is possible because community leaders such as Ibu RT / RW have been exposed to knowledge and get information from health education counselors such as midwives, doctors, nurses, or mass media or electronics.
4. Friend's relationship to exclusive breastfeeding

In respondents who give exclusive breastfeeding is supported by more friends as much as 45.7%, and 26.9% of respondents are not supported well by friends. While the non-exclusive breastfeeding respondents received good support from friends as much as 54.3% and who did not get good support from friends more that is 73.1%. To see the relationship of partner support to exclusive breastfeeding can be seen in the following table:

<table>
<thead>
<tr>
<th>Table 14 Relationship of Friend's Support to Exclusive Breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>Not Good</td>
</tr>
<tr>
<td>N = 0.184</td>
</tr>
</tbody>
</table>

Based on the results of statistical tests with the significance level of 5% X2 test results, p value of 0.184 this proves that there is no relationship between the support of friends against exclusive breastfeeding (p > 0.05).

5. The relationship to the four reinforcing factors against exclusive breastfeeding

Respondents who exclusively breastfed were supported both by four reinforcing factors, 48.6%, and 20.8% of respondents were not supported either by the four reinforcing factors. While the non-exclusive breastfeeding respondents got good support from the four reinforcing factors as much as 51.4% and those who did not get good support from the four reinforcing factors more that is 79.2%. To see the relation of support factor to the exclusive breastfeeding can be seen in the following table:

<table>
<thead>
<tr>
<th>Table 15 Relationship of reinforcing factors to exclusive breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>P = 0.034</td>
</tr>
</tbody>
</table>

Based on the results of statistical tests with significance level of 5% X2 test results, p value of 0.034 and this proves that there is a correlation between reinforcement factors against exclusive breastfeeding (p value <0.05).

The conclusion of bivariate test result of each bivariant indepeden to dependent variable can be seen in table below:

<table>
<thead>
<tr>
<th>Table 16 Summary of Bivariate Test between independent variables and dependent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>
1. Multivariate Analysis.

By using logistic regression analysis of enter method of 5 independent variable that is husband, midwife, community figure, friend, reinforcing factors together, tested by using Logistic regression method obtained one variable showing influence on dependent variable influence of reinforcing factor in lactating mothers perspective to exclusive breastfeeding. From the above it can be concluded that the effective response variables of community leaders have the strongest influence on exclusive breastfeeding.

With the method Enter obtained results that can be seen in the table below:

Table 17 Effect of independent variables on the dependent variable (Logistic Regression)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95.0% C.I.for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband Support</td>
<td>-.056</td>
<td>.827</td>
<td>.005</td>
<td>1</td>
<td>.946</td>
<td>.946</td>
<td>.187</td>
</tr>
<tr>
<td>Midwife Support</td>
<td>.058</td>
<td>.622</td>
<td>.009</td>
<td>1</td>
<td>.925</td>
<td>1.060</td>
<td>.313</td>
</tr>
<tr>
<td>Community Leaders' Support</td>
<td>1.298</td>
<td>.732</td>
<td>3.139</td>
<td>1</td>
<td>.076</td>
<td>3.660</td>
<td>.871</td>
</tr>
<tr>
<td>Partner Support</td>
<td>.013</td>
<td>.802</td>
<td>.000</td>
<td>1</td>
<td>.987</td>
<td>1.013</td>
<td>.211</td>
</tr>
<tr>
<td>4 factor Supports</td>
<td>.496</td>
<td>1.193</td>
<td>.173</td>
<td>1</td>
<td>.677</td>
<td>1.643</td>
<td>.159</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.065</td>
<td>1.275</td>
<td>2.622</td>
<td>1</td>
<td>.105</td>
<td>.127</td>
<td></td>
</tr>
</tbody>
</table>

From the table above showed that from independent variable after analyzed by using logistic test Regression with enter method is obtained; of the four reinforcing factors have no influence in the practice of exclusive breastfeeding, as seen from the value of exp (B) the support factor of community leaders has a value of 3.660 , although it does not have a significant influence but with the support of good community leaders will have a probability of 3.66 times for exclusive breastfeeding compared with community leaders who have poor support.

Conclusion
1. Husband’s wife’s support for exclusive breastfeeding is largely good at 37 respondents (60.6%).
2. The support of midwives in exclusive breastfeeding is largely favorable at 31 respondents (50.8%).
3. Support of community figures in exclusive breastfeeding is mostly good, ie 31 respondents (50.8%).
4. The support of friends in exclusive breastfeeding is largely good as much as 35 respondents (57.4%).
5. There is no relationship between husband’s support for wife about exclusive breastfeeding with p> 0.295.
6. There is no relationship between midwife support for exclusive breastfeeding with p> 0.600.
7. There is a relationship between support of community leaders towards exclusive breastfeeding with p> 0.008.
8. There is no relationship between the support of a friend to exclusive breastfeeding with p> 0.184.
9. There is a relationship between the four reinforcing factors against exclusive breastfeeding with p> 0.008.

References
Anggota IDAI. (2010). *Indonesia Menyusui*. Jakarta: Badan penerbit IDAI.
Ingan Ukur Tarigan, Ni Ketut Aryastami. 2012, *Pengetahuan, Sikap Dan Perilaku Ibu Bayi Terhadap Pemberian Asi Eksklusif*, Buletin penelitian sistem kesehatan *Vol 15, No 4 Oktober ISSN 1410 2935* 
The Effect of Lavender Aromatherapy to Perineum Wound Pain Post Partum

1Umaroh*, 2W.Turidawati, 3Melyana Nurul Widyawati
1/3Poltekkes Kemenkes Semarang
2Midwife at Puskesmas Kajen Pekalongan
*Email: umazaini@gmail.com

Abstract

Perineum wound pain in postpartum women can cause disruption in early initiation breastfeeding (IMD) less than 1 hour, delayed breastfeeding and laziness in mothers to do early mobilization that resulted in disruption of fundes uteri. Lavender aromatherapy is one of the treatment to reduce pain due its bactericidal, analgesic, antidepressant and antispasmodic effects properties when aromatherapy is inhaled. The active substance linalool and linalyl acetate effect as analgesic. The purpose of the research was to determine the effect of lavender aromatherapy to perineum injury pain by post partum women in Public Health Center Kajen I Pekalongan Regency. This research design used quasi-experimental design with control group design approach. Population were post partum mothers with perineum injury level II. The technique of sampling used accidental sampling to take 30 samples. 15 peoples for the treatment group and 15 for the control group. The instrument of data collecting used the Numerical Rating Scales (NRS). Statistic test used Wilcoxon test and Mann Whitney test. The result of the study showed that there was the effect of lavender aromatherapy to perineum injury pain by post partum mother with p value 0.000. From the results of this study was expected health workers can can reduce pain perineum postpartum mother and prevent the impact caused from the use of analgesics.

Key Words: Lavender aromatherapy, Perineum pain.

Introduction

The majority of postpartum mothers suffer from perineal pain at least in the first few days after birth and even those with an intact perineum may complain of pain. Although women expect pain during labor, postpartum pain usually occurs as an unwanted shock. As a result of the pain post partum mothers experience a sense of comfort that causes disruption initiation early breastfeeding (IMD) less than 1 hour, the mother is reluctant to early mobilization which cause to a decrease in uterine fundus levels are disrupted and mothers often postpone breastfeeding. Although women expect pain during labor, postpartum pain usually occurs as an unwanted shock and may cause difficulty in treating babies (infants), disrupting the bonding attachment of early breastfeeding initiation processes and potentially disrupting the transition to motherhood (Taufan, 2014; 88).

In the period of the puerperal mother, the perineal wound hinders mobility. Mobilization is required by the mother as soon as possible, if the mother is reluctant to mobilize it may affect the involution of the uteri resulting in an unhealthy lochia expenditure or discharge lochia expenditure, and postpartum hemorrhage which ultimately disturbs the puerperium (Maryunani, 2010). Perineal wound pain can make difficulty to the mother to sit comfortably. This case can cause bad effect on the mother’s desire for breastfeeding and the success of her infant’s breastfeeding that ultimately affects Exclusive Asiatic giving (Maureen, 2009; 88).

The pathophysiology of perineal pain experienced by postpartum is due to labor. when labor occurs cervical dilatation and uterine corpus distension stretching the lower segment of the uterus and cervix and the pain is continued to the dermaton supplied by the spinal cord segment similar to the segment receiving the nociceptive input of the uterus and cervix. Strain
and tissue tear during labor occur in the perineum and pressure on the perineal skeletal muscle, pain caused by excitatory superficial somatic structures and it is described as sharp and localized pain, particularly in regions supplied by the pudendal nerve (Mander, 2010).

Perineal pain in women who have had perineal stitches may not necessarily lower the level of pain compared with the first mother stitched. Individuals learn from previous experiences but that does not mean that the individual will receive pain more easily in the future (Potter and Perry, 2010). It depends on the coping mechanism of each individual, mothers who have already experienced perineal pain are also at risk of disrupted coping mechanism. Therefore, the pain of handling the perineal pain needs to be done so that the mother feels comfortable and has no negative impact on function also initial experience of being a mother.

Overcoming the pain can be done with pharmacology and non-pharmacological method. The pharmacological method that often used to relieve wound pain perineum in postpartum mother is analgesic. Perineal pain is usually felt for more than 3 days if the mother continues to consume analgesics it can cause an effect on the lactation process during Postpartum. Non-pharmacological methods include cold thermal methods, massage, correct acupuncture breathing techniques, hypnobirthing and aromatherapy reflexology (Judha, 2012: 7).

Aromatherapy is one of non-pharmacological method to reduce pain. Aromatherapy is a healing process using the concentrations of essential oils extracted from plants to enhance the health and wellbeing of the body, mind and spirit (Vitahealt, 2008). The scent is captured by the nose receptor then provides further information to areas in the brain that control emotions and memory as well as information to the hypothalamus which is the body's internal system immersion, including the sexuality system, body temperature, and reaction to stress (Sharma, 2009).

Lavender Aromatherapy has properties as bactericidal, analgesic, and antidepressant, antispasmodic when aromatherapy is inhaled, the substances contained therein will stimulate the hypothalamus to secrete the endorphin hormone because it can create a relaxed and calm also active substance in the form of linalool and linalyl acetate in the lavender effect as analgesic (Liu et al., 2008). The results of Ratna’s research (2012) show that lavender aromatherapy can decrease the intensity of post sectio caesaria wound pain and study of Marni (2012) proves that aromatherapy can decrease labor pain from pain scale 9.58 to 7.30.

A lavender aromatherapy containing linalyl acetate and linalool inhaled into the nose is captured by the bulbous olfactory and then enters through the olfactory tract branching into two, the lateral and non-medial sides. On the lateral side, this tract sneaks on the third neuron in the amygdala, the seminular gyrus and the ambiens gyrus which is the part of the limbic. The medial side line also ends in the limbic system. Limbic is part of the brain, shaped like the letter C as the central place memory, mood, and intellect are in. The PART of limbic, amygdala is responsible for our emotional response to the aroma. After the limbic aromatherapy stimulates enkefalin or endorphin exposure to the hypothalamus gland, and the ventromedial rostral medulla. Enkefalin stimulates areas in the cerebellum called raphe nucleus to secrete serotonin to create a relaxed, calm and lowered anxiety effect (Baehr, 2010).

This is consistent with Stea Susana’s (2014) study which shows lavender sensenar therapy positively affecting anxiety, controlling insomnia and controlling pain. Serotonin also acts as a neuromodulator to inhibit nociceptive information in the spinal cord. This neuromodulator closes the defense mechanism by occupying the receptors in the dorsal horn so as to inhibit the release of the substance P. Substance P itself is one example of neurotransmiter with action of excitatory. Inhibition of the p substance will make the pain impulse unable to pass through the projection neuron, so it can not be continued to higher processes in the somatosensory cortex, the parietal lobe, the frontal lobe and the midbrain so that it can not be perceived as pain and the pain decreases (Guyton & hall 2007).

It was confirmed from the results of Salamati’s research showed that the pain before and after inhalation of lavender aromatherapy significantly affected the reduction of pain with 0.05 p value. The preliminary survey at Puskesmas Kajen 1 in January 2017 to February 2017 which was delivered in Puskesmas was able to deliver Kajen 1 to get 65 normal maternal mothers, maternal mothers who had perineum rupture were 49 (75%), and maternal mothers without
perineum tears 15 (25%). Of 49 people with perineal injury 44 people had moderate pain and 5 had mildly injured pain. Therefore action needs to be done to reduce the pain experienced by postpartum mothers. One of the measures to reduce pain by using lavender aromatherapy. From the above background researchers interested in conducting research titled Effect of Lavender Aromatherapy on Perineum Mother Postpartum Injury pain at Puskesmas Kajen 1 Kabupaten Pekalongan

1. General Purpose
To know and to determine the influence of lavender aromatherapy on perineal wound pain in postpartum mother at Puskesmas Kajen I Pekalongan Regency

2. Specific Purpose
a. Describing perineal wound pain in postpartum mother in treatment and control group before giving lavender aromatherapy.

b. Describing perineal wound pain in postpartum mother in treatment and control group after giving lavender aromatherapy.

c. Analyze the influence of lavender aromatherapy on the perineal wound on the treatment group and the control group.

d. Analyzed the effectiveness of the influence of lavender aromatherapy on postpartum perineum wound pain in the treatment group compared with the control group.

**Method**
This type of research was experimental with pre and post-control group design. This study used two groups: control group and treatment group that measured the pain scale before (pretest) and after (posttest) intervention. Treatment group was given lavender aromatherapy and still got standard procedure in the form of analgesic, and control group only got fixed procedure that is analgesic.

Description

![Fig 1. Research method](image)

01: Pretest Treatment group Before giving of lavender and analgesic aromatherapy.

02: Posttest treatment group with lavender aromatherapy intervention and analgesic

03: Pretest control group before giving of analgesic

04: Posttest control group with analgesic

X : Intervention.

The population in this study were all postpartum mothers with second degree perineal lesions in delivery room of Puskesmas Kajen 1 which in April to May 2017 had 32 people. Sampling technique with purposive side, because the sample of this research is based on certain consideration that is postpartum mother with perineal wound of degree 2. According to Sugiono (2008: 91) that taking the number of samples for simple experimental research is 10-20 samples. This study used a sample of 15 people for the intervention group and 15 people for the control group. The instruments used are lavender aromatherapy, aromatherapy furnace as vaporizer and pain scale observation scale Nurmen ical rating scales (NRS) 0-10 pain scale, with pain limitation 0 painless , 1-3 mild pain, 4-6 moderate pain and 1-10 severe pain. The analyzes used with univariate analysis were mean, median and mode and bivariate analysis with wilcoxon test and Mann whitney test.

**Results**
Based on research conducted at Puskesmas Kajen 1 in April to May 2017 with a sample of 30 people. Where the sample is grouped into two namely the treatment group and the control group. In the treatment group, lavender aromatherapy was given for 30 minutes inhalation as well as standard fixed procedures given that analgesics and control groups were only given standard fixed procedures. From the research results obtained the following data:

Table 1: Distribution Frequency Pain Perineum Injuries Postpartum Mother Before Given Intervention

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>6.4</td>
<td>0.816</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Control</td>
<td>6.3</td>
<td>0.737</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

Based on table 1 The results showed that the average pain perineum wound respondent treatment group before given intervention in the form of analgetic and aromatherapy lavender 6.4 moderate pain. Most respondents felt pain at level 6 (moderate pain) with lowest pain level 5 (moderate pain) and highest 8 (severe pain). Average pain of perineum wound of control group respondents before being given intervention in the form of analgesic 6.3 (moderate pain). Most respondents felt pain at level 6 (moderate pain) with lowest pain level 5 (moderate pain) and highest 8 (severe pain).

Table 2 the average wound pain perineum respondent after treatment

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>3.93</td>
<td>0.816</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Control</td>
<td>5.33</td>
<td>0.884</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

Based on the table 2 indicated that the average wound pain perineum respondent treatment group after given intervention in the form of aromatherapy lavender is 3.93 (mild pain). Most respondent feel pain at level 4 with lowest level of pain 2 (mild pain) and highest 5 (moderate pain). The average of perineum wound pain in the control group after intervention was given as an analgesic of 5.3 (moderate pain). Most of the respondents felt pain at level 5 (moderate pain) with lowest pain level 4 (moderate pain) and highest 7 (moderate pain).

Normality test result for treatment group of pre test and post test is known to be abnormal distribution because sig < 0.05. Similarly, the normality test results of the control group of both pre test and post test is not normal so that the statistical tests used are Wilcoxon and Mann Whitney.

Table 3 Distribution of central pain value of wound in treatment group

<table>
<thead>
<tr>
<th>Variabel</th>
<th>N</th>
<th>Mean</th>
<th>Min-max</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre test</td>
<td>15</td>
<td>6.40</td>
<td>5-8</td>
<td>0.000</td>
</tr>
<tr>
<td>Post test</td>
<td>15</td>
<td>3.93</td>
<td>2-5</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows the results obtained of wilcoxon test p value 0.000 < 0.05 so that there is influence of aromatherapy lavender to pain perineum wounds of postpartum mother in treatment group.
Table 4 shows the results obtained wilcoxon test p value 0.000 0.05 so that there is an influence of analgesic on postpartum pain perineum wounds in the control group.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre test</strong></td>
<td>15</td>
<td>6.33</td>
<td>5-8</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Post tests</strong></td>
<td>15</td>
<td>5.33</td>
<td>4-7</td>
<td></td>
</tr>
</tbody>
</table>

Mann Whitney test results obtained p value of 0.000 < 0.05, which means there is a lavender aromatherapy effect on postpartum perineum wound pain in Puskesmas Kajen I Pekalongan District. Lavender intervention has a greater effect in reducing perineal wound pain. The average value of wound pain after treatment group was given lavender aromatherapy of 3.93, while the control group was 5.33. There was a difference of 1.4 ranges of pain between the control group and the moderate pain scale of 5.33 compared with the treatment group of 3.93 mild pain scale.

**Discussion**

1. Postpartum maternal wounds before intervention.
   The results of this study indicate that the level of pain of respondents for the treatment group before the lavender aromatherapy intervention was given with an average of 6.4 (moderate pain) and and the control group before given of analgesic invention with an average of 6.3 moderate pain). This means that postpartum maternal perineal wound pain before being administered between control and treatment groups is the same. It is similar to Wiwin's (2016) study that postpartum mothers with second degree episiotomy have moderate pain (35.7%) and research from Silviana (2011) found that medium pain scale (60%) in postpartum postpartum mother with eperiotomy of pereinum yeri experienced by postpatum mother in this research caused by labor process. when labor occurs cervical dilatation and uterine corpus distension stretching the lower segment of the uterus and cervix and the pain is continued to the dermaton supplied by the spinal cord segment similar to the segment receiving the nociceptive input of the uterus and cervix. Strain and tearing of tissue during labor occurs in the perineum and pressure on the perineal skeletal muscle, pain caused by excitatory superficial somatic structures and described as sharp and localized pain especially in areas supplied by the pudendal nerve (Mander, 2010).

   The level of pain of each mother are different depending on the way the postpartum mother copes with pain (coping mechanism), this is because the scale of pain is the subjective judgement that an individual perceives, although the mechanism is unclear even the brain structures that give rise to these perceptions are also unclear so pain is fundamentally subjective experience (Potter & erry. 2010). This pain scale is caused by the perception of each individual differently in assessing the pain she suffered.The perception of pain was influenced by several factors including age, sex, attention, anxiety and fatigue but the investigators did not discuss factors that influence, Results of Wenniarti (2014) study that pain in episiotomy post average pain scale 7.60 (severe pain ), This is supported by Andarmoyo (2013) who said in post episiotomy patients will feel the pain from mild pain to severe pain.

2. Pain Perineum wound of postpartum mother after intervention
   The results of this study on the treatment group that is giving lavender aromatherapy and still provide a fixed procedure of pain treatment with analgesic paracetamol obtained results of 3.93 (mild pain) is in accordance with the research conducted by Wiwin (2016) after giving arometerapi scale pain was moderate pain (35.7%) to mild pain (39.3%). The main chemical components of lavender are linalyl acetate, linalool. Linalyl acetate is used as
anesthesia for animals and can inhibit chemical pathways. Linalool can also be used as an antispasmodic (Liu, Lin, Jiang, et al., 2008).

Active substances in lavender aromatherapy have properties as bactericide, analgesic, antidepressant, and antispasmodic when aromatherapy is smoked, linalool and linalyl will stimulate the hypothalamus to release the endorphine hormone because it can cause a sense of relaxation and also effect as analgetik (Liu et al., 2008). Lavender is also useful as a sedative, relieves pain and alters the perception of pain (Lavabree, 1990 in Sun Hee Han, 2012), this is in accordance with research conducted by Argi Virgona Bangun (2013) that there is influence of giving aromatherapy lavender to patient post operation at hospital Dustira Cimahi. Lavender has many benefits that is as a preventive antisepsis infection, antibiotics and anti fungal. The essential oil of lavender can be used to treat insomnia, improving sleep quality and improving sleep quality patients in hospitals and reducing the need for sedatives at night. Massage with lavender essential oil improves sleep quality in patients with rheumatoid arthritis. The essential oil of lavender can reduce anxiety. Massage using lavender can reduce anxiety in dialysis patients. (Sharma, 2009) This theory is reinforced by research by CS Agustina 2016 that massage with aromatherapy can reduce anxiety, thus increasing milk production in post partum mothers And also research from Melyana 2016 that aromatherapy massage proven to decrease stress level so as to increase the level of prolactin in postpartum especially in primipara.

In the control group that was only given paracetamol have decrease in pain with an average of 5.33 moderate pain. Perineal pain in the control group that was given analgesics without aromatherapy decreased slightly from 6.3 (moderate pain) to 5.3 (pain medium). The results of this study in accordance with Danuatmadja & Meiliasari (2008: 47) which states that analgesic is a drug that can reduce or eliminate pain without disturbing the awareness of the mother who got it. The principle of the analgesic method is that the mother continues to feel pain, but the pain level is slightly reduced.

3. Effect of lavender aromatherapy on postpartum mother's perineal wound pain.

The results showed that wilcoxon test results obtained p value 0,000 < 0,05 so that there is influence of lavender aromatherapy to postpartum mother perineal wound pain in treatment group. Provision of lavender aromatherapy intervention reduced the average perineal wound pain from 6.40 to 3.93 or a decrease in pain by 2.47. This is in accordance with research from ening (2014) there is a difference of pain intensity in post sectio caesarain after giving lavender aromatherapy with p value 0.001. Wilcoxon test result obtained p value 0.000 < 0.05 so that there is influence of analgesic to postpartum mother's perineal wound pain in control group at Puskesmas Kajen I Regency of Pekalongan Analgesics in control group can decrease mean pain of perineal wound before given analgesic equal to 6.33 and after analgesic averaged postpartum perineum wound pain of 5.33% decrease in perineal wound pain before and after 1 scale of pain scale. This decrease in pain scale in postpartum mother with second degree perineal lesion is due to paracetamol which is a non narcotic analgesic drug.

Paracetamol is an antipyretic and analgesic but anti inflammatory is weak, this is because the biosynthetic paracetamol only inhibits and does not direct blockade of prostaglandins so its analgesic properties are used to treat mild to moderate pain. Paracetamol is absorbed by the gastrointestinal tract within half an hour to 1 hour and half-life for 2-3 hours (Pharmacology and therapy, 2007) This is corroborated by research by Ismail muhamad (2013) in his research that paracetamol is effective in relieving post operative pain with mild to moderate pain.

Mann Whitney test results obtained p value of 0.000<0.05, which means there is influence of lavender aromatherapy on postpartum perineum wound pain in Puskesmas Kajen 1 Pekalongan District. Mother experienced a decrease in pain after aromatherapy was given from the average pain of respondents before given aromatherapy of 6.4 to 3.93. This suggests that lavender aromatherapy can reduce the pain of postpartum perineal wound. The results of the study were similar to those done by Ratna (2013) that aromatherapy decreased the intensity of post sectio caesarea wound pain.
Aromatherapy is inhaled by the respondent through smell and carried by the nerve of the olfactory device to the hypothalamus or limbic area of the brain. Stimulation of the brain allows the brain to work to reduce pain. This is in accordance with Sharma (2009) which states that aromatherapy directly affects the brain such as analgesic drugs. According to (Howart and Hughes, 2007) The odor response generated will stimulate the brain's neurochemical cell work. For example, a pleasant odor will stimulate the thalamus to excrete enkefalin that acts as a natural pain reliever and produces a feeling of calm. The pituitary gland also releases chemical agents into the blood circulation to regulate the function of other glands such as thyroid and adrenal. Smell that creates a sense of calm will stimulate the area of the brain called raphe nucleus to secrete serotonin secretion which allows us to sleep this according to research from Kurnia (2009) that lavender aromatherapy improves sleep quality in the elderly. A lavender aromatherapy containing linalyl and linalool which are inhaled into the nose are captured by the olfactory bulb then enter through the olfactory tract, which branches into two, the lateral and medial sides. On the lateral side, this tract sneaks on the third neuron in the amygdala, the seminular gyrus and the ambiens gyrus that are part of the limbic. Limbic is part of the brain shaped like the letter C as a central place and memory, the mood of intellect is located. Part of the limbic amygdala is responsible for our emotional response to the aroma. Hipocampus is responsible for memory and recognition of odors, therefore, pleasant smells will create a feeling of calm and pleasure that can reduce anxiety (Baehr 2010). This is consistent with Stea Susana's (2014) study indicating that essential oil therapy of lavender positively affects insomnia anxiety and controlling pain, and Research from Syukrini (2016) that aromatherapy affects maternal anxiety in the first stage of labor.

Serotonin also acts as a neuromodulator to inhibit nociceptive information in the spinal cord. This neuromodulator closes the defense mechanism by occupying the receptors in the dorsal horn so as to inhibit the release of the substance P. Substance P itself is one example of neurotransmitter with action of excitatory. Inhibition of the substance P will make the pain impulse unable to pass through the projection neuron, so it can not be passed on to higher processes in the parietal lobe somatosensoris cortex, the frontal lobe and the midbrain so that it can not be perceived as pain and a decrease in pain (Guyton & hall 2007). This is confirmed by the results of the research by Salamati (2014) found that the pain before and after inhalation of lavender aromatherapy significantly affected the reduction of pain with p-value 0.05, and Marni (2012) in the study stated that there is significant influence of lavender aromatherapy in a inhalation of labor pain from 9.58 to 7.30. The results of this study found a difference of 1.4 ranges of pain between the control group and the moderate pain scale of 5.33 compared with the treatment group of 3.93 mild pain scale. In the control group is the group that only given of paracetamol pain scale from 6.3 to 5.3 this was due to the effect of paracetamol that biosintstically inhibited Prostaglangin. prostaglandins are chemicals that sensitize free nerve endings and impart pain to the brain. With prostaglandins inhibited the pain will be reduced. In the treatment group, the group that given lavender aromatherapy and still given pain scale analgesics from 6.4 to 3.93 this is because of the effects of paracetamol analgesics as well as the effects of lavender aromatherapy. When lavender aromatherapy inhaled, then hypothalamus will release endorphin, serotonin and enfekalin hormone. Endorphin hormone is a substance that causes a sense of calm, relaxed and happy. Serotonin and enfekalin are neuromodulator that prevents pain so it can be used as a natural pain reliever. Aromatherapy lavender in addition to reducing the pain also cause a sense of relaxation and a sense of happiness. Therefore lavender aromatherapy can be used as an alternative pain relief in postpartum mother with perineal wound.
Conclusion

Based on the results of research conducted at Puskesmas Kajen I Pekalongan District, which consists of treatment groups and control groups can be summarized as follows:

1. Average perineum wound pain in the treatment group prior to intervention in the form of lavender aromatherapy of 6.4 and average perineal wound pain in the control group of 6.33.
2. Average perineum wound pain respondent treatment group after given intervention in the form of lavender aromatherapy equal to 3.93 and average of perineal wound pain in control group after giving analgesic intervention equal to 5.33.
3. There was influence of lavender aromatherapy on postpartum perineum wound pain in treatment group with p value 0.000 and analgesic effect on postpartum maternal perineal wound pain in control group at Puskesmas Kajen I Pekalongan with p value 0,000,
4. There is a difference of effectivity of lavender aromatherapy to postpartum perineum wound pain in Puskesmas Kajen I of Pekalongan Regency with p value 0,000 <0,05.

References

Haston. 2007 Analisa Data Kesehatan Jakarta. Universitas UI.

Mauren Bolyle. 2009. Pemilihan Luka, Jakarta : EGC.


Sukrini. 2016. Pengaruh Aromaterapi terhadap tingkat kecemasan pada ibu bersalin kala 1 di kamar bersalin RSU KabupatenTangerang. Tangerang; Skripsi.

Smeltzer,SC. & Bare, B.G. 2008. Brunner And Sudarth’ textbook of Medikal Surgical Nursing. Alih bahasa Waluyo,A. Jakarta: EGC.


The Difference of Influence of Cooperative Learning Jingsaw against NHT (Numberes Head Together) with Student Learning Outcome at D3 Midwifery Study Program Faculty of Health Sciences Kadiri University

Na’imatul Retno Faizah
Study Program Bachelor of Midwifery
Faculty Of Health Sciences Kadiri University
Email: naimatul.rf@gmail.com

Abstract
Based on cards study result of DIII midwifery of Kadiri university academic 2014/2015, there are 30 from 47 students have a value 2,75. The purpose of this research is to know the difference effects of the application cooperative learning Jingsaw type and NHT on learning outcome students DIII midwifery at Faculty of Health Sciences Kadiri University. The research design used pre experimental. The population in this study were all students DIII midwifery second semester at faculty of health sciences kadiri university with totally sampling retrieved sample of 32 people. The instrument of this research are questionnare. The results of this study are analyzed by wilcoxon and mann whitney. The result showthere is influence of cooperative learning type jingsaw with studentslearning outcomes. And there is influence of cooperative learning type NHT with students learning outcomes. Based on bivariat analyze for difference effects of the application cooperative learning Jingsaw and NHT with α = 0,05 obtained p value = 0,046 so p value< α means H₀ rejecteddan H₁ accepted. Conclusion in this research are the difference effects of the application cooperative learning Jingsaw and NHT type on learning outcome students DIII midwifery on Faculty Health of Kadiri University. Based on the result of the research for educational institutions can apply cooperative learning so can improving learning outcome.

Key words : cooperative learning, jingsaw, NHT, learning outcome

Introduction
Education holds a very important role in improving the quality of human resources in a country (Syah, 2011). Learning midwifery is included in the education process. Therefore, learning midwifery should continue to be developed so the learning objectives can be achieved. In the study, there are two important aspects that is how students learn and how learners think (Rini, 2010). Basically all lectures want to achive competency in each learning. One form of competency is the skill of thinking and student cooperation. Through student activity and cooperation is expected to increase student learning achievement. The idea behind this study is how the subject matter designed so that the students can work together to achieve the goals of learning (Huda, 2015).

In general the process of learning on the program bachelor midwifery of Kadiri University have done with a conventional system with the approach of TCL (Teacher Centered Learning), although there have been several lectures who use the SCL (Student Centered Learning) where students are given the assignment of material by lectures and active learning either in groups or individually and then discussed. One of the subjects being taught are Midwifery Care I course is taught on a Semester II. The researchers chose subjects about the conception and nidasi contained on the course's Midwifery Care I. It is subject to the number of credits at most of the other courses semester II that is as much as 4 credits.

Based on the results of studies Student Card DIII Midwifery of Faculty Health Sciences Kadiri University on semester II academic year 2014/2015 there are as many as 30 students from 47 students, that has the value of Midwifery Care I below 2.75. With details of the 17 students have the value 2.5 and 13 students have a value of 2. Based on the survey results of low student learning outcomes at the course's Midwifery I among them because the students
are less actively involved in the learning process and less involved in the work of the same group of learners. It is also reinforced with learning methods which are not yet using cooperative learning and still tend to use the conventional system.

Micro-impact of the low learning outcomes students will produce in a low learning achievement of students and a decrease in the quality of learning of midwifery. While the impact of the low level of student learning outcomes macro surely have an effect on the quality of human resources (Suryabrata, 2010). Whereas students of midwifery as a health worker as midwife candidate is the spearhead in an attempt to improve the national health particularly in the decrease in the death rate of mothers and babies. Efforts to address the issue at the top of them with the improvement of quality education that can be started from the learning method of repair. Through student-centered learning by applying cooperative learning methods. Cooperative learning, have differing types such as Jingsaw and NHT (Numbered Head Together). Jingsaw learning model and the NHT is part of the cooperative learning model that can increase skill achievement and ability soft student. With this model of learning students are accustomed to working independently (either group or individual) in solving the problem or task given. And expected to cooperate and help each other with their peer (Slavin, 2009). Jingsaw learning methods and the NHT is a variation of a group discussion involving both students and in the process may be the lesson that is a little different. By involving liveliness and co-operation student learning goals can be more easily reached.

Because of benefit from Jingsaw and NHT, the researcher interested to study “The difference of influence of cooperative learning type Jingsaw against NHT (Numbered Head Together) type with student learning outcome D3 midwifery at faculty of health sciences Kadiri University 2016”.

Method
Design
This research is use a pre-experimental study with pre test post test design. This research is giving a pre-test before treatment, after being treated, then given a post-test. This design testing the differences influence of teaching methods cooperative learning towards learning outcome in Jingsaw and learning outcome in NHT.

Population and sample
The population of this study was all students of the D III midwifery second semester at faculty of health sciences Kadiri university academic year 2015/2016. It used totally sampling and retrieved 32 sample.

Variable
This research used independent and dependent variable. Independent variable were cooperative learning type Jingsaw and NHT (Numbered Head Together). And the dependent variable was student learning outcome students of the D III midwifery second semester at faculty of health sciences Kadiri university academic year 2015/2016.

Instrument
The instrument used in this study is a questionnaire. The questionnaires used in this research were made by the researchers about conception. This study used questionnaires with closed question (closed anded) This question provides some answers / alternatives and the respondents only choose one of them in accordance with his opinion (Notoadmodjo, 2012). Provision for positive question, correct answer given value 1 and wrong answer given value 0. Answer for negative statement, wrong answer given value 1 and correct answer given value 0.

Data analysis
In this research analysis was conducted to find out the difference of influence of cooperative learning type Jingsaw against NHT with student learning outcomes DIII Midwifery
To know the influence of cooperative learning type Jingsaw with student learning outcomes and influence of NHT with student learning outcomes used wilcoxon test. And the test for different types of cooperative learning Jingsaw and NHT used mannwhitney. Both descriptive result and hypothesis were analyzed by using an SPSS software version 20.

**Result**

The research took place on March 2016. And the implementation for the learning steps was in one week, two times class meeting.

**Table 1. Cross Analysis Student Learning Outcome DIII Midwifery on Midwifery Care I before after cooperatif learning Jingsaw type at Faculty of Health Sciences Kadiri University**

<table>
<thead>
<tr>
<th>Pretest Jingsaw</th>
<th>Posttest Jingsaw</th>
</tr>
</thead>
<tbody>
<tr>
<td>A %</td>
<td>B %</td>
</tr>
<tr>
<td>F</td>
<td>f</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
</tr>
</tbody>
</table>

Pvalue : 0.000  \( \alpha = 0.05 \)

Based on table 1 may be aware that the results of the study before the cooperative learning Jingsaw type most (62.5%) have a value of E and the results of the study after learning of cooperative Jingsaw type half of respondents (50%) had an A.

**Table 2. Cross Analysis Student Learning Outcome DIII Midwifery on Midwifery Care I before after cooperatif learning NHT type at Faculty of Health Sciences Kadiri University**

<table>
<thead>
<tr>
<th>Pretest NHT</th>
<th>Posttest NHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A %</td>
<td>B %</td>
</tr>
<tr>
<td>F</td>
<td>f</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Pvalue : 0.000  \( \alpha = 0.05 \)

Based on table 2 be known that the results of the study before the cooperative learning NHT type most (56.2%) is the study and results E after learning of cooperative NHT type almost half the respondents (43.8%) got the value of B.

**Table 3. Analysis of difference cooperatif learning Jingsaw type and NHT on Midwifery Care I at Faculty of Health Sciences Kadiri University**

<table>
<thead>
<tr>
<th>Learning outcome</th>
<th>Jingsaw</th>
<th>NHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>A (&gt; 80-100)</td>
<td>8</td>
<td>50.0%</td>
</tr>
<tr>
<td>B (&gt; 75-80)</td>
<td>4</td>
<td>25.0%</td>
</tr>
<tr>
<td>C (&gt; 69-75)</td>
<td>3</td>
<td>18.8%</td>
</tr>
<tr>
<td>D (&gt;60-69)</td>
<td>1</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

Pvalue : 0.046  \( \alpha = 0.05 \)
Based on table 3 learning outcomes can be known after learning of cooperative Jingsaw type most respondents i.e. 8 respondents (50%) have a value of A and the results of the study after learning of cooperative NHT type most of respondents (43.8%) have a value of B.

Discussion

First hypothesis

There is influence of cooperative learning type jingsaw with students learning outcome. From wilcoxon test the p-value is 0.000 which is less than 0.05. At table 1 we can conclude that cooperative learning type jingsaw can improve student learning outcome. The result of this study was similar with the result of Permatasari (2010), which stated that implementation of type jingsaw learning outcome model can improve student learning outcome in statistic.

Learning outcomes are something that students develop from learning outcomes. These learning outcomes are sedentary and will affect students both in terms of problems and in behavioral attitudes. Assessment of learning outcome can do by formative and summative. Assessment of learning outcomes in this study is a category of summative learning outcomes in the subcategory conception of midwifery care I.

In the assessment of learning outcomes can be done into several aspects including cognitive, affective and psychomotor. Affective spheres greatly influence the judgments in affective and psychomotor. Because in the affective domain the information obtained will be processed so as to affect the perspective of a person reflected from the behavior.

Important to improve student learning outcomes including learning outcomes in the cognitive domain. One way to improve student learning outcomes is by improving the teaching and learning process. Teaching and learning process has many components such as model. Thus, to improve student learning outcomes can be done by changing the learning model.

Cooperative learning type Jingsaw, students are placed in small groups. Each group was given information that discuss one topic from the issue of their learning time. After studying the information in each group, each member of the who study these parts assembled with members from other groups who also receive part of the same material. Assembly of the student who has the same information section is known as the Group of experts. This group of experts in each of these learners mutual discussion and looking for the best way how to explain parts of that information to friends of one of the group that originally. (Huda, 2015).

According to the researchers, cooperative learning Jingsaw type involves students actively in the learning process and make the student able to cooperate with the group. So increasing the understanding of students of a given material and can be applied well and have an impact on the improvement of student learning outcomes.

Second hypothesis

From analysis influence cooperative learning type NHT with learning outcome at table 2 with the p-value of 0.000, which less than α: 0.05. So, there is influence of cooperative learning type NHT (Numbered Head Together) with students learning outcomes. The result of this study was similar with the result of Febliyanti (2014), which stated there is influence of cooperative learning type NHT (Numbered Head Together) with learning outcome student XI science program on colloid chemistry.

Learning activities are student activities to obtain information (Hamalik, 2008). From this learning activity the student will get the learning result. Results are strongly influenced by the learning process that students experience. Because of the learning process students will gain experience, information and how acceptance of the material. One of the factors that influence learning outcomes is the learning model. So to improve learning outcomes can be done by changing the learning model. One of them by changing the model of learning into cooperative learning model type NHT (Numbered Head Together).

In model learning NHT learners are divided into small groups, in small groups that every student is responsible for sub material that has been shared with educators. The student in addition to mastering the material must also ensure that all group members understand the material mastered. This encourages every student to engage actively in the learning process as
well as help each other with their fellow group members to understand the material being studied. The total involvement of all learners in a learning model course NHT will positively impact against the learning motivation of learners. Learners will strive to understand the concepts or to solve problems presented by educators.

NHT model of learning that will either create an environment that's fun in learning as well as increase the liveliness of the learners in the learning process. On the model of learning students actively involved in NHT process of learning so that students’ passion for learning and mastering the material given rise. Passion and liveliness of the students encourage students to understand the material provided and have an impact on increasing student learning outcomes.

Third hypothesis

At table 3 can be know there is an increase in learning outcomes after a cooperative learning model of jigsaw and NHT type. And based on mann whitney test results in the get p value 0.046 less than α = 0.05. So there is a difference in cooperative learning Jingsaw type against NHT with students learning outcome D3 Midwifery at the Faculty of Health Sciences Kediri University 2016.

According to Roger in the Huda (2015) Cooperative Learning is a learning group activities organised by one principle that learning should be based on the change of social information among groups of learners responsible for analytical study on their own and encouraged to enhance the learning of the other members so that the required presence of the liveliness of the learners.

NHT and Jingsaw is the types of cooperative learning. Both are equally involving different students may be in its implementation. This study has two systems of equations, namely the division of students in small groups so that the value of the difference between the average of both the little learning.

The cooperative learning difference NHT and Jingsaw type occurs because of the difference in the implementation of cooperative learning NHT and Jingsaw type. Within the cooperative type NHT students only involved one time in a group discussion. While in cooperative learning type Jingsaw, student involved twice in the discussion. Student involvement twice in this discussion would enhance the understanding of the students regarding the material being taught, so that student learning outcomes on the Jingsaw larger than on the NHT (Numbered Head Together).

Conclusion

In this research it can be concluded that there is the influence of cooperative learning Jingsaw and NHT type with student learning outcomes DIII Midwifery on midwifery care I at the Faculty of Health Sciences Kediri University 2016. And it can be concluded that cooperative learning Jingsaw more effectiveness than NHT (Numbered Head Together) to improve student learning outcome.

Acknowledgement

The author would like to express her gratitude to all of the people who have helped and supported the research. And the author would like to thank to the Director Faculty of Health Sciences Kediri University especially the Chairwoman of the Department of Midwifery who has provided guidance and support to the implementation of this study.

References

Febriyanti, R., Vanny, M.A., Siang, T.G., 2014. Pengaruh Pembelajaran Kooperatif tipe NHT (Numbered Head Together) terhadap Hasil Belajar Siswa Kelas XI IPA SMAN 1
Dolo pada Materi Pelajaran Kimia Koloid. Tadulaku Palu University. P-ISSN: 2302-6030.


Rory., 2013. Statistik Deskriptif. Available at: Error! Hyperlink reference not valid.. [Date accessed: 6 Februari 2016]


The Influence Of Zilgrei Method On Anxiety Of Primigravida Mother In Second Stage Labor

Ati Nurwita

Midwifery Study Program, Stikes Jenderal A. Yani Cimahi
*Email: atinurwita@stikesayani.ac.id

Abstract

Laboring is a nature phenomenon. It can cause physical and psychological changes. In Indonesia coverage of labor is quite high. If it is not manage properly can cause maternal and child mortalities. The cause of maternal mortality is caused by direct and indirect causes. One of the indirect factors causes is psychological condition of mother at the time of laboring, who are unprepared for labor will experience anxiety. Some of distraction technique have been effective to reduce anxiety. Zilgrei method is one of distraction technique on labor, but not yet implemented in reducing anxiety. This study was aimed to analyze the influence of Zilgrei method over anxiety primigravida mother in second stage of labor. This study is analytic with static group comparison/post test only control design. Number of respondents were 40 respondents, they were 20 respondents of intervention group and 20 respondents of no intervention group. Bivariate analysis showed that Zilgrei method and anxiety on labor is not significantly correlated with mean difference -2.50 and significancy value 0.416 (P <0.005). This is maybe to be related with timing of the application of the zilgrei method. In the other study can be applied from one stage in labor. A combination of methods can be tried in other studies.

Key words: anxiety, labor, Zilgrei method

Introduction

The physiological transition of pregnant to be mother have a major physical and psychological change. This influence and change if not controlled will affect the delivery process (Myles, 2009). Labor is a process that begins with contractions, cervical dilation and the birth of a baby and placenta (Varney, 2008). The factors of influence labor are power, passage, passenger, psychological and helper (Varney, 2008) (Myles, 2009).

The coverage of labor in Indonesia is quite high, at 2016 until 5 million. If it is not manage properly can cause maternal and child mortalities (Kemenkes, 2017). Based on Indonesia Population Basic Survey at 2012 the mortality rate is 359 per 100.00 live birth. The cause of maternal mortality is caused by direct and indirect causes. One of the factor indirect causes is psychological condition of mother at the time of labor (Kemenkes, 2014).

The psychological conditions of maternal birth were different, makes the mother prepare and anticipate labor. During labor, the mother will feel pain and the perception of it is different. Those who do not prepare for labor will be anxious. Excessive anxiety will increase the stress hormone. Risk during labor is will be obstructed of cervical dilatation, increase of pain perception, prolonged labor and shoulder dystocia (Myles, 2009). Maternal anxiety on labor with normal delivery and cesarean are different significantly especially in social aspect (Aminabhavi and Hunagund, 2010). The result of study mention the risk of anxiety on labor is age, parity and traumatic (Zamriati et al., 2013).

Many methods are applied as distraction techniques to reduce anxiety. For examples pregnancy gymnastic (Larasati and Wibowo, 2012), murrotal therapy (Handayani et al., 2014), and support from husban (Diponegoro and Hastuti, 2009). The zilgrei method is one of distraction method on labor. This is apply a breathing technique, position and mobility during labor. The breathing technique helps the relaxation muscles, with long breathing and expiration through the mouth and is repeated at 5 seconds. Deep breathing increases the supply of oxygen to brain and stimulates the parasympathetic Nervous system and promotes a state of calmness.
Breathing techniques helps to feel connected to our body which brings awareness away from the worries and quiets the mind (Mary et al., 2016). The position technique with tilted to the left and movement pulls the knee to the abdomen its helps to relaxation of muscle. So with this technique the mother does not feel pain (Danuatmaja, 2008). The results showed the intensity of pain when stage I latent phase and stage I active phase of labor with a combination of Zilgrei and Endorphine massage methods is lower than the group that only given intervention method Zilgrei (Nurochmi, 2014).

In this study, to minimize labor anxiety apply a zilgrei methode. This study aims to analyze the influence of zilgrei methode to anxiety mother primigravida in second stage labor.

**Method**

This study is quantitative analytic with static group comparison/ Post test only control design (Hidayat, 2014). Population of this study were mother of birth in Isti Dariah and Lilis K. Anggono midwives practic independently. The sample in this study was calculated using sample technique for a simple experimental study using an experimental group with a control group, the number of samples of each strata 10-20 (Sugiyono, 2011). The inclusion criteria in this study were the mother primipara of the second stage with a presentation behind the head, without complications of labor, without psychological disorder and mother is willing to be a research respondent. The Exclusion criteria were the mother was refered for complicated labor and the baby born dies in the process of delivery. A set of questionnaires was adopted from Hamilton Anxiety Rating Scale (HARS) (Gabbard, 2000). Data collection was conducted through interviews on the mother after 2 hours postpartum. To analyze the difference of mean anxiety, when the data is normally distributed with unpaired t-tests, if not normally distributed with tested by Mann Whitney (Dahlan, 2011).

**Result**

A total of 40 respondents were contribute this study, they are 20 respondents experimental group and 20 respondents control group. As the present study aimed at influence of zilgrei methode to anxiety mother primigravida in second stage labor, the obtained scores analysis with unpaired t-tests, to analyze the difference of mean anxiety. The outcome of the analysis is presented in the table below:

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean ± standard deviation</th>
<th>Mean difference</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zilgrei Method</td>
<td>20</td>
<td>16.9 ± 11</td>
<td>2.5 (3.6 – 8.6)</td>
<td>0.416</td>
</tr>
<tr>
<td>Without Zilgrei Method</td>
<td>20</td>
<td>19.4 ± 7.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The result of bivariate analysis showed that zilgrei methode was not significantly to anxiety (p=0.416) with mean difference 2.5.

**Discussion:**

The authors has applied Zilgrei method at second stage of labor. The mother in second stage of labor is guident to take a deep breath, tilted position and movement pulls the knee to the abdomen. This is done aimed to reducing anxiety in second stage of labor.

The high level of depression leads to anxiety (Arshad and Razzaq, 2015). Positive thinking plays a significant role in dealing with anxiety, and challenging our negative thoughts which has the potential to provide our mind with some relief over its anxiety symptoms. Negative thinking is anxiety. It’s not a matter of whether or not you have the thought consciously. In order to be afraid of things, and in order to feel fear, anxiousness, or stress, our mind has to be focusing on the negative, so the fact that we are experiencing anxiety is an indication that these negative thoughts are occurring (Mary et al., 2016).

The anxiety is coused by labor pain, that pain scores are higher according to the evolution of cervical dilation. However it has been shown that pain which accompanies it, is a
subjective and complex experience that varies from individual to individual. Some women feel little pain whilst others find the pain extremely distressing (Jones Leanne, 2012). Pain during the course of labor is a common symptom in the stage before delivery and, unlike other acute and chronic pain experiences, this pain is not associated with disease but with the reproductive cycle of a woman (Mafetoni and Shimo, 2014). Then, its characteristics may involve age, parity and traumatic (Zamriati et al., 2013).

To reduce anxiety due to pain in during labor, applied a method to minimize anxieties. They were is Pharmacological and Non-pharmacological methods (NPMs). NPMs encouraged by the World Health Organization (WHO) in their recommendations for care in normal labor are classified by it as “conduits that are clearly useful and should be encouraged”, and they are strategies used during labor to increase tolerance to pain (Mafetoni and Shimo, 2014).

Zilgrei method is one of NPMs. This is apply a breathing technique, position and mobility during labor. the breathing exercise technique provided physical and emotional we a combination of methods can be tried in other studiesll-being. The changes in posture and mobility of the body resulted in positive effects, such as increased pain tolerance and reduction in the use of analgesics and anesthetics. In this study, Zilgrei method is not significantly correlated. This is maybe to be related with timing of the application of the zilgrei method. In the other study can be applied from one stage in labor.

Conclusion
This study only applied Zilgei method in second stage labor. This research is expected to be the initial data, to the other study about Zilgrei method. This study finding suggest the necessity of researching influence of Zilgrei method on anxiety in one stage until second stage labor. A combination of methods can be tried in other studies.

Acknowledgement
This research is made possible by support from research grant administered by research and community services department (LPPM), Stikes Jenderal A Yani, Cimahi.

References:


Maternal Health Literacy Towards the Readiness of Exclusive Breastfeeding

Sri Mulyani
*D4 Midwife Lecturer Medical Faculty UNS
*Email: yaniartha@yahoo.com

Abstract
Maternal health literacy can be defined as a cognitive and social abilities that can affect to the health of the mother. The low assembling of exclusive breastfeeding is caused by the lack of preparation in exclusive breastfeeding. The purpose of this study is to know the effect of maternal health literacy toward the readiness of mothers breastfeeding exclusively. This study was conducted on 150 pregnant women with their very first pregnancy by using cross sectional design with cluster random sampling. Enclosed questionnaires were used to measure the respondents literacy about health and the readiness of mothers in exclusive breastfeeding. Data were analyzed by using multiple linear regression model. Statistical testing is performed with a 5% significance level. All of the four indicators of maternal health literacy (knowledge about reproduction health, ability to access health information and analyze health problems, and ability to seek health supports) revealed that health literacy is a positive factor for the mothers’ readiness in exclusive breastfeeding. From all of these indicators, knowledge about reproductive health is the most contributed factor. Based on these results we conclude that health literacy is a positive factor for the readiness of mothers breastfeeding exclusively, the higher the mother’s health literacy score the higher the readiness of mothers in exclusive breastfeeding.

Keywords: exclusive breastfeeding, health literacy, readiness

Introduction
United Nations Children’s Fund (UNICEF) estimates that exclusive breastfeeding till six months could prevent the deaths of 1.3 million children under five year. While based on the WHO in six developing countries, the risk of death of infants aged 9-12 months increased by 40% if the baby is not breastfed, and for infants under two months, the death rate is increased to 48%. According Soetjiningsih, the process of establishing breastfeeding include prolactin reflex, and let down reflex in order to get the quality and quantity of milk the mother needs optimal preparation before feeding the baby. The failure mothers in breastfeeding exclusively caused by disruption of the process of formation of the milk, so milk production is less or even stopped, it could have been prevented if the mother prepare early. During pregnancy is a good time to make preparations in exclusive breastfeeding and therefore the role of the mother, in this case the pregnant women is very important (Renkert, 2001). According to Lin-lin et all, (2007) the low of maternal health literacy will cause various complications either during pregnancy, childbirth and infant care as the occurrence of anemia, hypertension, bleeding, low birth weight babies and a failure to provide exclusive breastfeeding.

Literacy is the ability to read and count. Literacy is not only the ability to read and count, but also about the social, cultural, community empowerment and community development (Kickbusch, 2001). In the sphere of health care literacy refers to the ability to read, understand and act on health care information, or the capacity to obtain, interpreting and understand basic health information and services to improve health. Health literacy is essential for empowerment
because with increasing abilities and knowledge in the health sector will be increased individual capacity to behave in a healthy life (Nutbeam, 2000).

In health literacy includes knowledge about health, nutrition, disease prevention, decision, action, have a first-aid skills and the ability to obtain information (Jorm, 2000). Obstetrics health literacy and gynecology is a skill to recognize, make decisions and anticipate problems during pregnancy (Kohan et all, 2007). Labor and after labor, in addition the skills that mentioned above, the ability to detect risk factors and taking steps to lifestyle healthier and better nutrition during pregnancy and childbirth is very necessary (Kohan et all, 2007).

The factors that affect in maternal health literacy include: education, the inability to read, understand, make decisions and problems identify during pregnancy, childbirth and take care the baby. The corelation between health literacy and health result, found that people who have low health literacy have a number of hospitalization 29% to 52% higher (Baker et all, 2002., Sudore, 2007).

Several studies have shown the importance of health literacy during pregnancy and after birth, such as Kohan research that examines the influence of health literacy of the mother to prenatal care and pregnancy state that mothers who have adequate health literacy have significant differences in starting early and antenatal care frequency, birth weight, maternal hematocrit, consumption of iron tablets and folic acid, weight gain during pregnancy, gestational age at birth, method of labor and breastfeeding (Kohan et all, 2007). The same thing also delivered by Ohnishi, Kakamura and Takano found that mothers who have a good maternal health literacy, will be less to give birth with low birth weight, premature infants, infant mortality and and failure in exclusive breastfeeding compared with the group with low maternal health literacy. Lin-Lin, in their study examined whether prenatal breastfeeding education course or postpartum lactation support increasing rates of exclusive breastfeeding compared with routine care at the hospital. They found that women who received antenatal education are more likely to give exclusive breastfeeding up to six months after labor. A study conducted by Endres et al, to literacy and readiness of pregnancy in people with diabetes conclude that low prenatal maternal health literacy with pre-pregnancy diabetes is associated with several factors that could adversely affect to labor result
Some of the literature above express problems about the impact of the low maternal health literacy, therefore the problem of this research was to determine whether maternal health literacy affect the readiness of mothers in exclusive breastfeeding during pregnancy.

Method

Respondents in this study were 150 first child pregnant women, with cross sectional study design. The sampling technique used in this study is a cluster random sampling. Enclosed questionnaire was used to measure the respondents about health literacy and readiness of mothers in exclusive breastfeeding. Maternal health literacy was measured by four indicators of reproductive health knowledge, the ability to access information, the ability to analyze her health problems, and the decision to found the aid of her health. Readiness exclusive breastfeeding mother is measured by maternal health, maternal psychological, physical (breast), nutrition and health of the baby. Data were analyzed by using multiple linear regression model. Data processing was performed using SPSS for Windows version 13. Statistical testing is performed with a significance level of 5%.

Result and discussion

Demographic characteristics showed that most respondents are at the beginning of childbearing age is 21-25 years (64.0%). The level of education of most respondents (52.7%) were secondary (senior high school graduate). In addition, a lot of respondents who have been educated up to university level (28.7%). Most respondents (68.0%) were just married less than 2 years. Description of the characteristics of the respondent can be seen in Table 1.
Table 1. respondents characteristic description

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 – 20 th</td>
<td>11</td>
<td>7.3</td>
</tr>
<tr>
<td>21 – 25 th</td>
<td>96</td>
<td>64.0</td>
</tr>
<tr>
<td>26 – 30 th</td>
<td>38</td>
<td>25.3</td>
</tr>
<tr>
<td>31 – 35 th</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>36 – 40 th</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Background study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>SMP</td>
<td>26</td>
<td>17.3</td>
</tr>
<tr>
<td>SMA</td>
<td>79</td>
<td>52.7</td>
</tr>
<tr>
<td>PT</td>
<td>43</td>
<td>28.7</td>
</tr>
<tr>
<td>The age of marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2 th</td>
<td>102</td>
<td>68.0</td>
</tr>
<tr>
<td>2 – 5 th</td>
<td>44</td>
<td>29.3</td>
</tr>
<tr>
<td>&gt; 5 th</td>
<td>4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Multiple linear regression model is composed of the readiness of mothers in exclusive breastfeeding as the dependent variable and four indicators of health literacy as the independent variables. Testing the feasibility of some assumptions underlying the multiple linear regression model gives the following results:

1. Residual otherwise normal distribution. It is characterized by a pattern on a plot of residual normality (p-p normal regression plot of the standardized residuals) which indicates that the dots tend to follow a straight line diagonally.

2. The model does not have symptoms heteroskedastisitas indicated. This is shown by a pattern of dots spread randomly above and below a value of 0 to the y axis on a scatter plot between the predicted value and the standardized regression studentized regression residuals.

3. There is no multicollinearity between independent variables. This is indicated by VIF <10 or tolerance> 0.1 on all independent variables.

4. No autocorrelation or serial correlation that they showed the scramble sequence data. It is based on a statistical value durbin-watson approaching 2.

Table 2. Estimation and Test Statistics Multiple Linear Regression Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Koefisien</th>
<th>P</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>VIF</td>
</tr>
<tr>
<td>Contanst</td>
<td>36.028</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Reproduction health ability</td>
<td>1.511</td>
<td>0.297</td>
<td>1.175</td>
</tr>
<tr>
<td>The ability to access information</td>
<td>0.893</td>
<td>0.059</td>
<td>1.159</td>
</tr>
<tr>
<td>The ability to analyzed health problem</td>
<td>-0.153</td>
<td>-0.015</td>
<td>1.064</td>
</tr>
<tr>
<td>The ability of health seeking</td>
<td>1.436</td>
<td>0.086</td>
<td>1.030</td>
</tr>
</tbody>
</table>

Explanation: Durbin-Watson = 2.005; Adjusted R Square = 0.085; F = 4.455; p = 0.002.
Multiple linear regression model consisting of indicators of health literacy (as can be seen in Table 2) has a relatively small contribution to the readiness of mothers in exclusive breastfeeding. This was stated by adjusted R square of 0.085. Although this contribution is small but statistically significant (F = 4.455; p = 0.002). It can be concluded that, overall, health literacy is associated with exclusive breastfeeding preparedness.

From the four indicators, three of them have a positive regression coefficient. The ability to analyze health problems is an indicator with a negative regression coefficient but relatively small (smallest than other indicators) and statistically doesn’t the most significant (p = 0.850). This is based on the contribution of another three indicators has become decisive. The regression coefficient is positive, indicating that health literacy is a positive factor for the readiness of mothers in exclusive breastfeeding. The more high health literacy scores or better knowledge about reproductive health, the more high the readiness score for the mother in exclusive breastfeeding. When analyzed partially, knowledge about reproductive health is the only indicator that has had a statistically significant correlation (p = 0.001) and the most closely related (β = 0.297) with the readiness of mothers in exclusive breastfeeding.

This research has provided empirical evidence that the mother's health literacy is a positive factor for the readiness of mothers in exclusive breastfeeding. Pregnant women with good health literacy will have an impact to prepare better for exclusive breastfeeding during pregnancy, by early preparing mother will be better prepared to breastfeed and get an optimal quality and quantity of breast milk, thus the mother will succeed in exclusive breastfeeding.

Multiple linear regression model showed that from the four indicators of health literacy, only knowledge about reproductive health were significantly associated with maternal readiness in exclusive breastfeeding. This indicator also has the closest relation or otherwise has the largest contribution to the maternal readiness breastfeeding exclusively.

Conclusion
Based on the results of this study concluded that health literacy is a positive factor for the readiness in exclusive breastfeeding. Knowledge about reproductive health is an indicator that has the most contributed.

References
Kohan, S., Ghasemi, S. and Dodangesh, M. 2007, Association between maternal health literacy and prenatal care and pregnancy outcome, Iranian Journal of Nursing and Midwifery Research12, 4, 146-152.
Ohnishi, M., Kakamura, K. and Takano, T. 2005, Improvement in maternal health literacy among pregnant women who did not complete compulsory education: policy implications for community care services. Health policy 72, 1, 157-164.

The Global Challenge in Reproductive Health Issues; Lesson Learnt for a Developed Country: Japan

Hiromi Eto
Nagasaki University, Japan
Email: heto@nagasaki-u.ac.jp

Abstract
Recently, we are facing women’s later age of marriage and thus older age for first birth, declining birthrate and increasing aging population, increasing technology in medical care, and advancing reproductive techniques. The field of perinatal medicine is also changing. At first, we thought there must be a practical guideline, which midwives can follow, in these changing times, in order to provide safe, comfort, and high quality care throughout the perinatal period. Consequently, The Academy of Midwifery started to develop the “Evidence-based guidelines for midwifery care in pregnancy and childbirth” containing care policies for healthy low-risk women and newborns. We developed clinical questions based on midwifery care, systematic reviews and searched references. Based on a critical appraisal of each reference, we provided the evidence statement and recommendation. In 2016, the 2nd edition was produced; there are 43 clinical question: 13 in the pregnancy section and 30 in the intrapartum section. For the 2nd, we established a System for Enhancing Midwifery Competencies through collaboration among related associations. In the past midwives had no professionally approved mechanism to acquire advanced competencies. Therefore we needed to enhance midwifery competencies in a planned manner. We developed and promoted tools for enhancing midwifery competencies that included suggesting the career paths for midwives. This career path is contained in the Clinical Ladder of Competencies for Midwifery Practice (CLoCMiP). In 2015, we establish the CLoCMiP® Level III certification system. The overview of the system is that it objectively evaluates that midwives have a specified level of midwifery competencies, and reviews and certifies that the CLoCMiP Level III requirements are satisfied. The CLoCMiP® system was supported by the leading midwifery related organizations: Japanese Midwives Association, Japanese Nursing Association, Japan Academy of Midwifery, Japan Society of Midwifery Education, and the Japan Institute of Midwifery Evaluation. In 2016, 11,002 midwives became certified through the CLoCMiP® Level III certification system. Thus ‘Advanced Midwives’ were born. Fidelity to the Evidence-based guidelines for midwifery care and the System of Advanced Midwife will contribute to developing our profession and assuring quality of care by all Japanese midwives.

Keywords: CLoCMiP, reproductive health, midwifery
The Role of Demographic Factors and Social Characteristics toward the Willingness to Undergo HIV testing among Reproductive Age Women in Bandung City

1Flora Honey Darmawan*, 2 Hadayana, 3 Farid Husin
1 Stikes Jenderal Achmad Yani, 2 Pasca Sarjana Unpad, 3 Magister Kebidanan Unpad
*Email: florahoney.d@gmail.com

Abstract
HIV Voluntary Counseling and testing has been identified as the most effective way to detect HIV status. However, not all women are voluntarily access this services. This study was aimed to analyze the relationship between of demographic factor, social characteristics and the willingness to undergo HIV testing among reproductive age women in Bandung City. Research method was case control by consecutive sampling. The study was conducted in seven villages in Bandung. A samples much as 90 reproductive age women who participated in the mobile VCT, consisting of 45 respondents who are not willing to perform HIV test and 45 respondents were willing to perform HIV test. Data collected through questionnaires were analyzed by chi-square and multiple logistic regressions. Research showed all demographic factors did not shows any significant correlation with the willingness to undergo HIV testing (p>0.05) while social characteristics (lack of knowledge, the perception that she is not at risk, stigma, and lack of certainty in VCT services) were significantly correlate with the willingness to undergo HIV test (p<0.05). Based on multivariable analysis, the perception that she is not at risk was the most dominant factor in the willingness to undergo HIV testing with OR = 5.916 (CI95%: 1.563 to 22.393). It conluded demographic factors did not contributed lower the willingness to perform HIV test, while social characteristics contributed lower the willingness to perform HIV test. Perception of he/she is not at risk is a big factor towards the willingness to perform HIV test on reproductive age women in Bandung.

Key words: Demographic factors, mobile VCT social characteristics, willingness of HIV testing.

Introduction
Women have a heavy burden as a result of epidemic of HIV and AIDS, among others, the emergence of social stigma, discrimination, maternal morbidity and mortality. In addition, the transmission of HIV through mother to child (MTCT) tend to increase along with the increasing number of HIV-positive women were infected with their partner either from their risky behavior. Adverse effects of MTCT can be prevented when HIV in reproductive age women diagnosed early through HIV test. 1-3

Some research shows that many reproductive age women who are not willing to perform HIV test, especially those who are considered at low risk. HIV and AIDS epidemic is still dominated by injecting drug users and commercial sex users, but is expected in the next 15 years in the prevalence of high-risk groups’ couples will also increase significantly. Therefore, early awareness of the risks of contracting HIV and AIDS in the male partner's risk needs attention considering that the focus of the research, socialization and health program focused on high-risk groups only. 4

Mobile VCT activities targeted specifically to the reproductive age women is the first pillar of the implementation of the MTCT program. Based on the reports of mobile VCT
activity in 2012 found that as much as 569 reproductive age women is only 224 (39.4%) were willing to perform HIV test.

**Method**

The research method was quantitative analytical observational case control study (case-control). The populations were reproductive age women who stay in Bandung city and follow the activities of mobile VCT in MTCT programs at Mawar clinic of West Java in May to July 2013 period. Subjects were divided into 2 groups: 45 respondents’ case group (reproductive age women who are not willing to perform HIV test) and 45 responder control group (reproductive age women who are willing to perform HIV test). The measurement of the independent and dependent variable used primary data. The primary data obtained by recording, interviews and questionnaires. Data collected performed logistic regression test.

**Result**

**Characteristic of research subject**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Willingness to perform HIV test</th>
<th>Cases (unwilling)</th>
<th>Control (willing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>n=45 %</td>
<td>n=45 %</td>
</tr>
<tr>
<td>&lt; 20 year</td>
<td></td>
<td>3 6,7</td>
<td>8 17,8</td>
</tr>
<tr>
<td>20-34 year</td>
<td></td>
<td>21 46,7</td>
<td>18 40,0</td>
</tr>
<tr>
<td>≥ 35 year</td>
<td></td>
<td>21 46,7</td>
<td>19 42,2</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td></td>
<td>6 13,3</td>
<td>1 2,2</td>
</tr>
<tr>
<td>Junior high school</td>
<td></td>
<td>38 84,4</td>
<td>34 75,6</td>
</tr>
<tr>
<td>Senior high school</td>
<td></td>
<td>1 2,2</td>
<td>10 22,2</td>
</tr>
<tr>
<td>College</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td>1 2,2</td>
<td>11 24,4</td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td>1 2,2</td>
<td>2 4,4</td>
</tr>
<tr>
<td>House wife</td>
<td></td>
<td>32 71,1</td>
<td>24 53,3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 12,2</td>
<td>8 8,9</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried yet</td>
<td></td>
<td>7 15,6</td>
<td>18 40,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38 84,4</td>
<td>27 60,0</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Viewed from the characteristics on the table 1, research subject in cases and control majority about ≥ 20 years old, secondary education (junior high school and senior high school), a housewife and married status.

1. The role of demographic factor and social characteristics towards the willingness to perform HIV test on reproductive age women

<table>
<thead>
<tr>
<th>Variable</th>
<th>Willingness to perform HIV test</th>
<th>Value p*</th>
<th>OR (IK 95%)</th>
</tr>
</thead>
</table>

130
### Table 3. Role of Social Characteristics towards the willingness to perform HIV Test on Reproductive Age women

<table>
<thead>
<tr>
<th>Variable</th>
<th>Willingness to perform HIV test</th>
<th>p Value *</th>
<th>OR (IK 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td>24</td>
<td>53,3</td>
<td>11</td>
</tr>
<tr>
<td>Good</td>
<td>21</td>
<td>46,7</td>
<td>34</td>
</tr>
<tr>
<td>Perception at risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not</td>
<td>40</td>
<td>88,9</td>
<td>25</td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>11,1</td>
<td>20</td>
</tr>
<tr>
<td>Stigma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High stigma</td>
<td>34</td>
<td>75,6</td>
<td>18</td>
</tr>
<tr>
<td>Low stigma</td>
<td>11</td>
<td>24,4</td>
<td>27</td>
</tr>
<tr>
<td>Confidence in VCT services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td>20</td>
<td>44,4</td>
<td>9</td>
</tr>
<tr>
<td>Good</td>
<td>25</td>
<td>55,6</td>
<td>36</td>
</tr>
</tbody>
</table>

Note: * based on chi-square test

Based on the table 2 above it can be seen that the less of education and unmarried status associated with willingness to perform HIV test on reproductive age women with p <0.05.

Table 3 shows that knowledge is lack, the perception that he/she is not at risk, high stigma, and less confident of VCT services associated with the willingness to perform HIV test on reproductive age women (p <0.05).

2. The role of Multivariable Analysis of Demographic factor and Social Characteristics towards the Willingness to perform HIV test Reproductive Age women

### Table 4. Factors that Contribute towards The Unwillingness to Perform HIV Test on Reproductive Age Women

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Value p**</th>
<th>OR (IK 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception at risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stigma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High stigma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low stigma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence in VCT services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Stage** | Less of education | 0.562 | 0.314 | 1.754 (0.587-5.240)  
**Beginning** | Unmarried status | -1.113 | 0.078 | 0.328 (0.095-1.134)  
| Less of knowledge | 1.211 | 0.032 | 3.358 (1.113-10.128)  
| Perception that he/she is not at risk | 1.667 | 0.015 | 5.297 (1.377-20.375)  
| High stigma | 1.191 | 0.027 | 3.290 (1.145-9.452)  
| Less confidence to VCT services | 1.735 | 0.015 | 5.667 (1.407-22.827)  
**Konstanta** | -2.777  

**Stage** | Unmarried status | -1.190 | 0.055 | 0.304 (0.090-1.025)  
**Ending** | Less of knowledge | 1.264 | 0.024 | 3.540 (1.181-10.605)  
| Perception that he/she is not at risk | 1.778 | 0.009 | 5.916 (1.563-22.393)  
| High stigma | 1.192 | 0.026 | 3.295 (1.154-9.403)  
| Less confidence to VCT services | 1.690 | 0.015 | 5.420 (1.386-21.197)  
**Konstanta** | -2.618  

Description: **based on logistic regression analysis, the model's accuracy 76.7%**

Based on the results of the final model which are illustrated in table 4, obtained that the variable that have a role towards the willingness to perform HIV test is a variable that has a value as much as $p \leq 0.05$ knowledge, perception that he/she is at risk, stigma and confidence in the VCT services. From the results of logistic regression test it can be concluded that the perception that he/she is not at risk is the most dominant factor plays a role in the willingness to perform HIV test.

Based on PAR analysis showed as much as 80% the proportion of women who are not willing to perform HIV test can be prevented by eliminating the perception that she is not at risk of contracting HIV. In addition, 41% the proportion of women who are not willing to perform HIV test can be prevented if they have a good confidence in VCT services.

**Discussion**

1. **The role of demographic factor towards the willingness to perform HIV test on reproductive age women**

From the results, the further analysis of the differences can be concluded that there are no significant differences between demographic factors in the group who are not willing to perform HIV test and the groups that are willing to perform HIV test with $p > 0.05$. Statistical test showed that age, education, occupation, and marital status do not risk lowering the willingness to perform HIV test on reproductive age women ($p$ values $> 0.05$).

Demographic variables classified into predisposing factors. Predisposing factors are the factors that facilitate or predispose the person's behavior. Antecedent factors predisposing factor is the behavior of the basis or motivation for behavior. Results of research is not consistent with the theory that explains that affect how the state of a person's age, increasing
age, the experience and knowledge is increasing.\textsuperscript{5} Age is just one predisposing factors that do not stand alone in influencing the behavior of a person's health, but also influenced by other factors.

Knowledge of someone associated with the reasoning of the information related to age. In this case, the mental abilities required to learn and adjust than new situations, such as remembering ever studied, analog reasoning and creative thinking achieved pursue in the age of twenties.\textsuperscript{4} In this research, occupation has no significant correlation with the willingness to perform HIV test. This can be said because the occupation is not a risk factor that directly influence the health of a person's behavior. In addition, the type of occupation performed by the research is not a job that can give rise to the risk of contracting HIV and AIDS, so that respondents do not need to perform HIV test. On the other hand, women who do not work have more time than women who do not. Considering the implementation of HIV test on mobile VCT that coincide with working hours and also because of the cost of HIV tests free of charge.

Marital status can affect a person's perception towards conditions experienced. The emergence of consciousness on the subject of the status is not married yet to perform HIV test can be influenced by the transition agricultural society to an industrial society and globalization in various fields, expand and increase the number of cities, the rapid advancement of communication technology, the looseness of the social structure and the structure of the family, all of whom impact on the behavior of individuals and communities, which will certainly have an impact on the risk of contracting HIV and AIDS.

The results showed that there was significant relationship between knowledge, perception that he/she is at risk, stigma, and confidence VCT services to willingness to perform HIV test (p <0.05). Lack of knowledge, perception he/she is not at risk, high stigma, and less confidence in VCT services potentially lowers the willingness to perform HIV test on reproductive age women with OR 1 and KI above 95\% does not cut the number 1. The research in the context of VCT concluded several factors influencing the willingness to perform HIV tests include lack of knowledge about the risks of HIV and the level of formal education.\textsuperscript{7}

Knowledge is something that is needed in order to change the mindset and behavior in society. Knowledge is related to the environment in which the respondent resides. In addition, exposure to the communications media will affect the level of knowledge. They may not be exposed to conditions up to date while the area where their lives far away from the hustle and accessibility, and supported with the level of education that is relatively lack.

Based on the Health Belief Model, behavioral prevention towards HIV and AIDS will arise when a person feels that he/she is at risk for contracting the disease. The vulnerability is a subjective condition so that the acceptance of the individual against HIV infection and AIDS susceptibility varies widely. Someone is likely to have a very strong vulnerability when he convinced he/she is at risk of contracting HIV and AIDS, having a friend or spouse who are at risk of HIV infection, or have a history of risky behavior. Instead, someone can be declared to have vulnerabilities that are very weak when he/she was not sure that he/she is at risk of contracting HIV and AIDS.\textsuperscript{4-9} Stigma and discrimination towards \textit{ODHA} appears to be related to ignorance about the mechanisms of HIV transmission, the estimated excess risk of contracting through casual contact, and negative attitudes toward social groups disproportionately affected by the HIV and AIDS epidemic. This is coupled with the belief that less precise (many misleading myths) that can add fear and discrimination, which can be a stigma towards \textit{ODHA} and this is an obstacle in efforts to prevent and testing HIV.\textsuperscript{10-11}

VCT counselor or VCT practitioner has an effect on the willingness of HIV test. The research in Mozambique in 2009 found that the perception of the quality of health services is an important predictor of test HIV.\textsuperscript{12} Widiyanto et al in their research also suggests that beliefs about VCT has the most significant relationship to the strength of the practice VCT.\textsuperscript{13}

2. The role of Multivariable Analysis of Demographic factor and Social Characteristics towards the Willingness to perform HIV test Reproductive Age women
The results showed that the self-risk perception dominated the category stating that no risk of contracting HIV. In Multivariable, risk perceptions have a positive relationship with the willingness to perform HIV test at constant $+1.778$. This variable is the most dominant factor role on the willingness to perform HIV test with OR = 5.916, which means that respondents with no risk of self-perception had 5.9 times greater odds for not willing to perform HIV test compared to respondents with risk perception.

The low perception of vulnerability due to the persistence of the notion that only people including to the high risk are susceptible to contracting HIV. This can happen due to lack of knowledge about how HIV is transmitted clearly. Low perception of the benefits can be caused by lack of socialization about the benefits of HIV test including HIV testing clearly, so it can make them worry about the discrimination that will be received if the HIV test results positive. The research in North Vietnam found that the unwillingness to perform HIV test associated with a person’s perception that he/she not at risk. Women do not always realize that their partner might have contracted HIV risk behaviors. It will influence the low risk perception and acceptance of HIV test on women. Respondents who are married have a lower risk perception than the unmarried. In addition, knowing or recognize people who are infected with HIV or died of AIDS would affect risk perception. This is possible because when someone more concerned with HIV and AIDS, he/she will understand that he/she may be at risk and realize the consequences of the disease as well as to realize the importance of prevention and testing to determine their HIV status.

Conclusion

Demographic factors that consist of age, education, occupation, and marital status, do not contribute to lower the willingness to perform HIV test on reproductive age women. Social characteristics that consist of less knowledge, perception that he/she is not at risk, high stigma, and less confidence of VCT services, contribute to lower the willingness to perform HIV test on reproductive age women. The perception that he/she is not at risk is a big factor towards the willingness to perform HIV test on reproductive age women.

Suggested for further researcher in order to minimize bias by controlling all the limitations and develop research with qualitative methods, especially the dominant role of variables. For the parties concerned, especially to Mawar Clinic at PKBI West Java in order to improve the provision of information and the knowledge that every person who has sexual intercourse, at risk for contracting HIV (growing perception that he is at risk), through various media such as advertising on radio, television, information in newspapers, leaflets, calendars, video playback, and so on. In addition, the need to develop a more effective strategy by observing the service area while maintaining privacy and social marketing methods to maintain service standards to improve public confidence in mobile VCT services.

Acknowledgment

Praise to ALLAH SWT for all the abundance of grace and love Him so that Authors can complete this study. Thanks and deepest appreciation to the counselors, beloved family prayer, encouragement and support during this time, as well as the sister of the deceased author on the wisdom and inspiration provided. Thank you to all those who cannot be mentioned one by one which has given supports, moral support, and helpful suggestions for the author. May Allah SWT give all the goodness in the world and the hereafter.

References

The Influence of Endorphin Massage Towards the Laboraing Improvement on Primparous Mother at Ms. Anna Private Midwife Practice in Bandung Regency

1Indria Astuti*, 2Rd Noucie Septryliana
Stikes Jenderal Achmad Yani Cimahi
*Email: ind_ast@yahoo.com

Abstract
Laboring is a physiological occurrence experienced by a woman. Laboring that can not be handled properly can lead prolong labor. Factors that affect it is because of maternal discomfort during laboring which can be caused by pain affect the increase in body glucose consumption in maternal so that mothers can experience fatigue and catecholamine secretion that impact on uterine contractions. Abnormal contractions can cause the occurrence prolonged in labor. Prolong labor can cause intrapartum infections, uterine rupture, pathologic retraction rings until maternal and infant deaths. One of the efforts to improve uterine contractions is by endorphin massage. The purpose of this study is to determine. The influence of endorphin massage towards the laboring improvement on primiparous mother. The research design used was Quasi Experiment with "Posttest-Only Control Design" divided into 2 groups, 16 respondents who were not given massage treatment and 16 respondents who were treated massages whereas progress of labor was assessed using patographic observation sheet, the data were analyzed using Test T Dependent. The results of the analysis showed that for the group that did not give endorphin massage had an average of 2 hours and 11 minutes of labor and the group who get endorphin massage had an average of 7 hours 26 minutes. Its means that there is an influence of endorphin massage towards the laboring improvement on primiparous mother with P <0.000. It is expected that endorphin massage can be used as an alternative method in providing maternal care to maternal that have an impact on laboring improvement

Keywords: Quasi experimental design, endorphin massage, laboring improvement
Introduction

Labor is a physiological occurrence experienced by a woman. Labor that cannot be handled properly can lead the delivery process does not go smoothly and can cause prolong the labor. At the time of labor, the mother condition will respond to the pain, and her brain will perceive any contractions as pain, and cause stress (Hoseini, 2013).

The pain in labor is a painful uterine contraction that may result in increased the activity of the sympathetic nervous system. Severe pain in labor can lead to physiological changes in the body, such as increased blood pressure, rising heart rate, and an increase in respiratory rates, and if not treated properly, this will increase fear, tension, fear and stress. The increased of glucose consumption on maternal who stressed can cause fatigue and catecholamine secretions that inhibit uterine contractions, and this causes prolonged labor (Bobak, 2005, Cuninghham 2004).

The duration of labor affects on the outcomes and complications of labor. It is also accompanied by higher risk of infection, physical and mental disorders, and infant mortality, high possibility of postpartum hemorrhage, infection, fatigue, anxiety and psychosis.

The presence of interconnectedness between fear or anxiety with pain. If the mother is not ready for labor, the mother will feel very sick during the process of labor. Anxiety can lead the production of stress hormones, namely adrenaline hormone which can add to the pain that already exists. The accumulation of oxytocin and adrenaline can cause the pain become severe (Jannah & Widajaka, 2012).

The pain that appear during labor normally will continue to increase as the opening and will continue until the labor (Jannah & Widajaka, 2012). Pain and anticipation of pain lead anxiety, so it can cause muscle tension and release of the substances of trigger. The result is the acceleration of the pain cycle-anxiety-tension, emotional pain and increase the tension levels of cortisol and ketakolamine which may influence the duration and intensity of labor (Scholt & Priest, 2002).

Efforts that can be performed to reduce the occurrence of prolong labor is to improve the uterine contractions. One of the nonpharmacological efforts to improve uterine contractions is endorphin massage. Endorphin massage is a technique of touch and light massage performed on the head, neck, shoulders, back and thighs. The benefits are to normalize the heart rate and blood pressure, and improve the relaxed conditions on the mother body by triggering a feeling of comfort. This technique can increase the release of oxytocin substances (Aprillia, 2010: 113).

The influence of endorphin massage on uterine contractions can take place in two ways, which can direct and indirect affect on contraction. The influence of endorphin massage directly on contraction is continuous stimulation/ massage in the endorphin receptor location will stimulate the body's natural morphine expenditure, the endorphin hormone. The strength of endorphins is huge and almost 200 times more potent than morphine. This is very natural and every human being has it. Because endorphins are a natural hormone produced by the human body, endorphins are the best pain relievers (Aprillia, 2010).

Endorphins can be activated by stimulating the endorphin receptor location in the midbrain of periaqueductus gray substances. Giving stimulation of endorphin massage in the arm, neck, back (thoracic 10 to 12 and lumbar 1) which are the source of innervation of the uterus and cervix can stimulate ascending nerve receptors where the stimulation is delivered to the hypothalamus through the spinal cord, and continued to the gray part of the midbrain (periaqueductus). The stimulus received by the periaqueduct is conveyed to the hypothalamus, and hypothalamus deliver to the descending nerve pathway, and last the endorphin and oxytocin hormone secreted into the blood vessels (Aprillia, 2010: 113-115).

The endorphin hormone will increase the level of relaxation of the mother that affects contraction stability and the oxytocin hormone will stimulate smooth muscle of the uterus to contract adequately (Aprillia, 2010: 113-115). When the body condition is relaxed, it occurs the increase in parasympathetic nerve work in delivering orders to the back of the brain, so it result the increasing the production of oxytocin and endorphin hormones (Aprillia, 2010: 113).
Endorphin massage is safe to perform. There are no side effects because it does not use drugs and does not cause harm because it does not use chemicals (Aprillia, 2010: 113-115). With the same stimulus, the level of endorphin will be different for each person. This is because sensitivity to stimuli for the release of endorphins varies in each person (Danuatmaja and Meiliasari, 2008: 67-68). Maternal mothers who performed massage for 20 minutes have higher levels of endorphine than those without a massage of 142.82 pcg / ml (Aryani, et al., 2015).

The purpose of this study was to determine the influence of endorphin massage towards laboring improvement on maternal primiparous.

Method

This research is a quasi-experimental by giving intervention of endorphin massage with the type of design used Posttest-Only Control Design. The population is all primiparous mothers at Ms. Anna private midwife practice in Bandung Regency. The subjects of the study were chosen by purposive sampling technique which is all maternal who met the criteria. Inclusion criteria are primigravida maternal, stage I is active phase and exclusion criteria of complicated or complicated mother and maternal who doesn’t accompanied by the her husband. Sample are 32 people divided into 2 groups (1 group did not get endorphin massage and 1 group get endorphin massage)

The endorphin massage in group was done continuously from the respondent who met the criteria, then performed the endorphin massage for 20 minutes, observation of contraction for 10 minutes with a rest break for 20 minutes until the stage phase I ended (cervical opening 4 cm).

In the control group, anamnesa was performed and observed the labor improvement every 60 minutes. The massage is performed in accordance with the SOP of endorphin massage. Instrument used is the observation sheet (partograf). Place of research carried at Ms. Anna private midwife practice in Bandung Regency. The data collection is from March to August 2017.

Result and Discussion

<table>
<thead>
<tr>
<th>Perlaku</th>
<th>Jumlah responen</th>
<th>Min</th>
<th>Max</th>
<th>Rata-rata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelompok Pijat Endorphin</td>
<td>16</td>
<td>1 Jam</td>
<td>4 jam</td>
<td>2 jam 18 mnt</td>
</tr>
<tr>
<td>Kelompok Tidak di pijat Endorphin</td>
<td>16</td>
<td>5 Jam</td>
<td>12 jam</td>
<td>7 jam 26 mnt 4 detik</td>
</tr>
</tbody>
</table>

Sumber : Data primer tahun 2017

Based on 1 table, it obtained the average value of labor improvement in primipara maternal mother is 2 hours 18 minutes and maternal mother who does not get endorphin massage is average 7 hours 26 4 seconds.

In line with the theory that endorphine levels in the body will increase after 20 minutes after massage every hour during labor (Aryani, et al., 2015 and Aprillia, 2010: 113-115). Maternal mothers who are on a 20-minute massage have higher endorphine levels than those without a massage around 142.82 pcg / ml (Aryani, et al., 2015).

Endorphin hormones produced in the body can be triggered through various activities, such as deep breathing, relaxation, meditation and endorphin massage. The level of endorphin released by the body varies from one to another (Danuatmaja and Meiliasari, 2008: 67-68). Endorphin hormones can be activated by stimulating the endorphin receptor location in the midbrain periaqueductus gray substances which is released into the blood vessels. The endorphin hormone present in the maternal blood vessels will increase the level of relaxation of the mother that affects contraction stability, and the oxytocin hormone will stimulate smooth muscle of the uterus to contract adequately (Aprillia, 2010: 113-115).
Table 2 influence of Endorphin Massage towards labor improvement in primiparous maternal mothers

<table>
<thead>
<tr>
<th>Perlakuan</th>
<th>Asymp. Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelompok kontrol</td>
<td>0.000</td>
<td>32</td>
</tr>
<tr>
<td>Kelompok kasus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sumber: Data primer tahun 2017

Based on Table 2, the value of $p = 0.000$, if the value of $p \leq 0.05$ means "Ho is rejected", there is a significant difference in labor improvement which is not performed endorphin massage with endorphin massage, this shows that there is influence of endorphin massage on the labor improvement on primiparous maternal mothers.

Mothers who perform endorphin massage will be more relaxed and calm, anxiety and fear of the mother to face the process of labor will be reduced and increase contraction (Danuatmaja and Meiliasari, 2008: 68).

The endorphin is a hormone produced in the hypothalamus and transported by the axoplasmic flow to the anterior pituitary and then released into the blood. This hormone gives a relaxing effect (Lestari, et al., 2012). The relaxation effect in the maternal causes a decrease in muscle tension and relaxation of the abdominal muscles and this can lead to a lack of friction between the uterus and the abdominal wall. This occurrence can lead to an increased of uterine contractions with the release of oxytocin and help decrease the fetus more quickly (http://journal.unair.ac.id). In addition, the relaxed condition experienced by the mother who performs massage can improve the genital blood circulation and improve cervical elasticity, so it can accelerate cervical opening (http://journal.unair.ac.id).

The secretion of oxytocin and endorphin hormone in the blood increases after the massage. Oxytocin is a hormone produced in the hypothalamus and is transported through the axoplasmic flow to the posterior pituitary and then released into the bloodstream. Endorphin gives the acceleration effect of labor by stimulating uterine smooth muscle contraction (Lestari, et al. 2012). The oxytocin that flows smoothly in the mother's body makes maternal contractions adequate. The adequate uterine contractions are directly proportional to cervical dilatation. The more adequate the contractions of the uterus, the faster the cervical opening and thinning (progress of labor) (jurnal.stikesstrada.ac.id).

This research is in line with the results of Ningrum's research, A.G. (2013). She mentions that quantitatively there is a transformation due to the treatment of massage on the labor improvement at the stage I active phase of the majority of respondents (71.4%) suffered adequate uterine contractions (jurnal.stikesstrada.ac.id). Another study conducted by Indah Lestari, et al. (2012). It states that the ratio of the opening velocity between the two groups shows that $p = 0.000$. It means that there is an influence of massage on the opening rate of the cervix. Giving massage will cause decreased muscle tension and relaxation, including abdominal muscles that can increase uterine contractions with the release of oxytocin (http://journal.unair.ac.id).

**Conclusion**

The labor improvement of maternal who gets endorphin massaged faster than those who did not get, so that there is influence of endorphin massage towards the labor improvement of Primiparous maternal with a value of $p = 0.001$.

**References**


Utami, S., 2008. [Online] Available at: [http://psychology.uii.ac.id/images/stories/jadwal_kuliah/naskah-publikasi-04320265.pdf#page=1&zoom=auto,0.849](http://psychology.uii.ac.id/images/stories/jadwal_kuliah/naskah-publikasi-04320265.pdf#page=1&zoom=auto,0.849) [Diakses 17 Maret 2017].


Kristanto, 2013. *Peningkatan Keterbukaan diri dengan Teknik Home Room*. [Online] Available at: [http://repository.uksw.edu/bitstream/123456789/7405/2/T1_132009059_BAB%20II.pdf](http://repository.uksw.edu/bitstream/123456789/7405/2/T1_132009059_BAB%20II.pdf) [Diakses 20 Maret 2017].


[Diakses 15 Maret 2017].
Cunningham, F. G., 2006. *Obstetri Williams ed. 21*. Jakarta: EGC.
Suara.
The Effect of Reminiscence Therapy on Diabetes Mellitus Patients with depression at The Persadia Clinic Dustira Hospital Cimahi

1Argi Virgona Bangun*, 2Nadirawati
1,2 Nursing Science Dept. School of Health Sciences Jenderal Achmad Yani
Email: argie.virgona@gmail.com

Abstract
Diabetes mellitus is a chronic disease that is increasing annually. Without proper treatment and control, the disease will lower the quality of life of the patient and is certain to cause complications. Treatments for diabetes mellitus are lengthy and they require discipline that will sometimes change the patient’s life pattern. As a result, it may bring adverse psychological effects on the patient, such as depression. In turn, depression can affect the treatment of diabetes mellitus. Reminiscence therapy is one of the psychotherapy treatments proven to be effective in reducing depression by focusing on the positive aspects of the patient. The purpose of this research was to know the effect of reminiscence therapy for depression among patients with type 2 diabetes mellitus at Persadia clinic in Bandung. This research employed the pre-experimental method with a group of 32 respondents at pretest and posttest stages, with a non-random, purposive sampling method. The data collection was obtained by questionnaires following the PHQ-9 format and analyzed statistically using a dependent t-test. The results showed an average score of depression before therapy at 15.22 (mild-moderate depression) and after therapy at 10.28 (mild depression). Thus, it was concluded the reminiscence therapy for depression among patients with type 2 diabetes mellitus at Persadia clinic in Bandung with a P value (0.000) < α (0.05) has an effect to some degree. From the study, it is suggested Persadia clinic continue this therapy to help improve diabetes mellitus patient’s quality of life and treatment compliance.

Key words: Depression, Diabetes Mellitus, Pre-experimental, Reminiscence Therapy

Introduction
Diabetes Mellitus has become a global health issue especially in the developing countries. The disease is a metabolic type characterized by hyperglycemia, a state of insulin intolerance or both. Diabetes Mellitus is the most complex disease that demands significant attention and effort in its management and treatment compared to other chronic illnesses since it cannot be medicated or cured. The disease is among the chronic illnesses has high potential in altering broad aspects of the life of the patient, such as his psychological state. A common mental disturbance found in such patients is depression. A patient experiencing depression usually exhibits the lack of interest and ability in performing daily activities, emotional instability, and callousness towards the disease itself. It leads to the patient to lose control over his own blood sugar level. Mackin and Arean (2005) (in Putra, 2014) state that there are interventions that can be employed to treat depression, with Cognitive Behavior Therapy (CBT) combined with Interpersonal Psychotherapy (IPT), Reminiscence therapy and medication. Such interventions are also supported by Snyder dan Lindquist (2002) who propose that Reminiscence therapy has the potential to prevent as well as treat depression since it stimulates the patient with type 2 diabetes mellitus to maintain positive thoughts.

Based on a prior study through the interview technique which surveyed seven diabetic patients who underwent treatment at Persadia Clinic, Dustira Hospital, Cimahi, four of them were...
identified experiencing depression. Their complaints included being more emotionally sensitive than usual, insomnia, restlessness, anxiety, and random heart throbs. Furthermore, a patient felt isolated from the people around them. On the other hand, the clinic has never carried out Reminiscence therapy. Thus, it was considered important to conduct an intervention in the form of Reminiscence therapy to enhance the patients’ self-worth, self-awareness, and adaptation towards the stress factors.

Method
The research design applied in this study is the quasi-experiment type of Pre Test Post Test One Group Design (before and after) it is implemented to a group twice, namely before the experiment (01) and after the experiment (02), normally referred to as pre test dan post test (Arikunto, 2006).

The sampling technique in this study is purposive sampling which is one of the techniques for non-probability or non-random sampling. The researcher determined the samples she deemed representative to the population characteristics which were previously acknowledged (Hastono, 2007). The study employed a 5% degree of significance and a 90% power test, thus the 32 respondents for the sample was acquired using the sampling formula of paired variables (Sabri & Hastono, 2008).

The data collection was conducted in Persadia Clinic, Dustira Hospital Cimahi between June and July 2016. The research team collected the data by measuring depression using the PHQ-9 instrument, and conducted five Reminiscence therapy sessions comprised of two sessions of individual therapy and three sessions of group therapy, each lasting 30-45 minutes. After the therapy, the researchers measured the depression score of the respondents using the same instrument aforementioned.

The independent variable of the research is the Reminiscence therapy and the dependent variable is the depression of type-2 diabetic patients. Data Analysis was done with uni-variate and bi-variate analyses to determine the difference in the depression scores before and after the therapy through testing the means of the dependent. The results of the normality test showed a normal distribution; therefore, a bi-variate analysis was conducted using the paired t-test, type of a parametric test to discover the difference of the dependent means.

Results
Univariate Analysis Depression Prior to Reminiscence therapy on table 1.

<table>
<thead>
<tr>
<th>Depression</th>
<th>Mean</th>
<th>SD</th>
<th>95%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Treatment</td>
<td>15.22</td>
<td>4.633</td>
<td>10-25</td>
<td>32</td>
</tr>
</tbody>
</table>

Based on Table 1, the average score of depression from 32 respondents suffering from type-2 Diabetes Mellitus prior to the reminiscence therapy is 15.22 with the standard deviation of 4.633. The lowest and the highest scores were 10 and 25 respectively. From the interval estimation, it was concluded that 95% was the level of certainty that the average score of depression was between 13.55 and 16.89.
Depression Post Reminiscence Therapy

Tabel 2 Mean Distribution of the Scores of Depression Experienced by Type-2 Diabetic Patients Post-Reminiscence Therapy at Persadia Clinic, Dustira Hospital, Cimahi in 2016

<table>
<thead>
<tr>
<th>Depression</th>
<th>Mean</th>
<th>SD</th>
<th>Min-Max</th>
<th>95% CI</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Treatment</td>
<td>10.28</td>
<td>4.129</td>
<td>3-20</td>
<td>8.79-11.77</td>
<td>32</td>
</tr>
</tbody>
</table>

As seen in Table 2 above, the average score of depression from the 32 respondents with the Type-2 diabetes mellitus post reminiscence therapy was 10.28 with the standard deviation of 4.129. The lowest and highest depression scores were 3 and 20 respectively. A ninety-five percent certainty level was maintained that the average score of depression was between 8.79 and 11.77.

Bivariate Analysis

Tabel 3 Mean Distribution of the Scores of Depression of Type-2 Diabetic Patients Pre- and Post-Reminiscence Therapy at Persadia Clinic, Dustira Hospital, Cimahi

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kelp</th>
<th>Beda</th>
<th>Mean</th>
<th>N</th>
<th>SD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depresi Pre Intervention</td>
<td>15.22</td>
<td>4.94</td>
<td>32</td>
<td>10.28</td>
<td>4.129</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Based on table 3, the mean difference of the depression score was 3.750 with a standard deviation of 4.129. Statistic tests yielded the p value : 0.000 with alpha 5%: it, therefore, can be concluded that there was a difference of the mean of depression score between pre- and post-intervention. It leads to the conclusion that there was an affect caused by reminiscence therapy towards depression on patients of type 2 diabetes mellitus at the Persadia Clinic, Dustira Hospital, Cimahi, in 2016.

Discussion

Depression Post-Reminiscence Therapy

The analysis result in Table 4.2 showed the mean of depression score post reminiscence therapy 10.28 (light depression) with scores ranging between 3 and 20 lied between the normal and light category. It displayed a decrease of 4.94 in the mean depression score after intervention.

Depression treatment can be done by pharmaceutical and or psychotherapeutic methods. According to Peng et al. (2009), different types psychotherapy such as cognitive behavior, general psychotherapy and reminiscence therapy are considered effective in treating patients with depression. In this study, diabetic patients were provided with reminiscence treatment since their
age ranges between 46 and 59 (middle to senior age). In accordance to RIPFA (2006 in Syarniah, 2010), reminiscence therapy is given to senior patients experiencing depression, dementia, and cognitive disorders that cause low self-care and self-worth, social isolation, helplessness, and desperation.

Reminiscence therapy is a method related to recollection of memories to increase mental health and quality of life (Chen, Li & Li, 2012). Memory is an unforgettable or forgotten event or experience. Recollection of such memories helps patients to adjust with their current life alteration. The process of remembering enjoyable and affective past occurrences can increase self-worth (Mackin & Arean, 2005 dalam Wheeler, 2008).

Reminiscence therapy not only focuses on memory recollection but it is also a structured process useful to reflect upon life to find its meaning and adaptive coping. It is conducted with two or more people shared with family members, the group, or the caregivers so that communication takes place and create positive aspects. Chiang et al. (2009) claimed that the positive aspects arising from reminiscence therapy can affect the emotions and behavior which in turn will provide encouragement or motivation to face problems.

Reminiscence therapy for type 2 diabetic patients encourages them to discuss their pleasant past events or experiences, reducing depression by elevating positive emotions. It was carried out in five sessions for the duration of 30-45 minutes with the first 2-3 sessions discussing guided topics. In the research process, each respondent was given a chance to share their emotions, discuss topic related past events, and express their feelings at the end of the therapy. A positive bond was formed with the caregivers (nurses) during individual sessions since the patients were more communicative with them. Furthermore, the respondents expressed their hopes and plans to the group regarding their illness, yielding the feeling of not being due to the fact that they were experiencing the same condition.

The feeling of inclusion derived from the common ground of having the same diagnosis which led to a sense of calmness among the group members due to the emotional support provided. Emotional support repaired negative emotions caused by stress. Research conducted by Hartati (2010) showed that clients preferred the support group at Syamsi Dhuha Foundation Bandung on the basis of group members experiencing similar conditions.

Based on the discussion above, the rational conclusion would be that the therapy relies on participants recollecting and sharing their pleasant past events. In doing so, a participant has a mean to place meaning in his life and help adjust himself to the current changes in his life. It has the potential to increase his mental health and the quality of his life. As for the patients observed in the study, the treatment was able to reduce depression.

The Effects of Reminiscence Therapy on Depression

The results of the study exhibited a decrease of the mean score of depression among type-2 diabetic patients after undergoing reminiscence therapy, from 15.22 (mild depression) prior to the treatment and 10.28 (mild depression) after treatment, with a difference of 4.94. The statistical test yielded the P value of 0.000 with alpha 5%, leading to the conclusion that there is a decrease in the means of the depression scores. In turn, it suggested that there were effects of the reminiscence therapy on depression experienced by the aforementioned respondents.

A study by Jooj et al. (2015) showed that reminiscence therapy could decrease depression experienced by female diabetic patients. The results indicated that there were significant differences between groups that either receive or deprived from such intervention. The numbers of depression significantly dropped in the treated group.

Besides effective towards reducing depression, reminiscence therapy can also increase self-worth and social interaction (Chao, et al. 2006). Other positive effects of the therapy are, among others, the increase of hope and satisfaction in life, the increase in the ability to solve problems, and the increase in self-care. Chiang et al. (2009) added that it is beneficial in assisting elder citizens to raise their well-being and prevent psychological disorders as well as isolation. Memories and experiences have emotional effects on individuals.

The reminiscence therapy method employed in the research is the simple reminiscence, carried out in five sessions consisting of pleasant memories of childhood, adolescence and adulthood, family members at home, and self-evaluation as well as self-integrity.
sessions, the respondents verbalized their emotions such as relief and happiness, and how reminiscing gave self-gratifying satisfaction and motivation to be active, to be rejuvenated, to be grateful of life, to be not previuous of their current condition, to be more patient, and to be more open to others.

Reminiscence therapy can be given individually, with the presence of family members, or in a group (Kennard, 2006 dalam Syarniah, 2010). It not only assists the patients to overcome depression, but also raises awareness for the care givers since they can observe the patient’s background story, their style of communication, friendship and their ability to adapt.

Parallel to the study by Hidayati et al (2015), the results showed that the group receiving treatments experienced a significant decrease in depression level compared to the controlled group consisting of elderly residing in retirement homes after individual treatments. The treatment was conducted individually due to variations of problems of the group members, flexible time and location for treatment, and more openness in exposing their feelings.

It can be concluded from the discussion that reminiscence therapy has effects on depression experienced by type-2 diabetic patients. The therapy can effect the lymbic system and lead to an increase in comfort due to the increase in serotonin dan norepinephrine. It may be conducted individually or in a group since both methods indicated a decrease in depression. Therefore, effective treatments such as reminiscence therapy does not only reduce symptoms of depression but also increase self-care, health, and the quality of life of diabetic patients.

Conclusion
Before reminiscence therapy, the mean score of depression of type-2 diabetic patients was 5.22 with a standard deviation of 4.633. The lowest and highest scores were 10 and 25 respectively. From the interval estimation, it was concluded on the basis of 95% certainty that the mean depression score was between 13.55-16.89. Based on the interpretation of the instrument the 10-25 score range indicates a mild-medium stage of depression.

After intervention, the average score of depression of the same patients was 10.28 with a standard deviation of 4.129. The lowest and highest scores were 3 and 20 respectively. A ninety-five percent certainty gained from interval estimation showed a depression mean score range between 8.79-11.77, thus indicating a downward trend in the depression score.

The mean of the depression score from the first test (prior to the therapy) was 15.22. In the second measurement (after therapy), the mean reached 10.28. Therefore, a difference of 4.94 in the means with a standard deviation of 4.129 and the statistical test of 0.000 lead to the conclusion that there are effects from the reminiscence therapy conducted on type-2 diabetic patients with depression at the Persadia Clinic, Dustira Hospital, Cimahi in 2016.

References
Relationship of Eating Habits with Occurrence of Eating Disorders in Pre-School Children in Islamic Education Foundation Riyadol Mahirin Cimahi

Setiawati
Nursing Department Stikes Jenderal Achmad Yani Cimahi
E-mail: wati_kusnasetia@yahoo.com

Abstract
Growth and development of children are influenced by several factors both internal and external. One of the external factor is the nutrition consumed by the child. Toddler age is the critical age in which a child will grow rapidly both physically and mentally. This time child need nutrients that can help the growth and development of body and brain. As a parent would often have trouble the children eating difficulties, even when eating time is becoming "War" between children and parents. This study aims to determine the relationship of eating habits with the occurrence of eating disorders In Pre-School Age Children in Islamic Education Foundation Riyadol Mahirin Cimahi. The study design used cross sectional, data collection techniques using a questionnaire with a total sampling of 30 people. The results showed almost all 86.7% of respondents have a habit of enjoying certain types of food and 26.7% respondents experience eating disorders. Statistically showed there is no significant relationship between eating habits with eating disorders. It suggested parent are always providing a pleasant environment while eating time, make a variety of healthy food to be brought lunch to school.

Keywords: Eating disorder, eating habit, pre-school children

Introduction
Growth and development of children are affected by several factors both internal and external. One of the external factors is the nutrition consumed by the child (Stallings et al., 2008) Parents are expected to have a proper understanding of the nutrients that children need to grow and develop, and the nutrients that children need at a certain age to be properly administered, although it is undeniable that the environment and socioeconomic status of the family greatly affect nutrients for children (Contento et al., 2006). Provision of nutrients for children is not only to meet the physical or physiological needs of children, but as well as on psychodynamic aspects (Worsley, 2002), psychosocial development (Sa and Ea, 1988), and organic maturation (McCann et al., 1994). Toddler age is the critical age in which a child will grow quickly both physically and mentally (Gallahue and Donnelly, 2007). This is the time a child is in dire need of nutrients that can help the growth and development of body and brain (Gómez-Pinilla, 2008). It can grow and develop normally children need adequate nutrition. Like parents must often have trouble eating difficult to eat, even when eating into a time of "war" between parents and children. Forcing the child to eat without knowing the reason why he just ate it will make the trauma and afraid to eat, therefore before the parents make a decision, find out the cause of the child difficult to eat.

Method
The research design was cross-sectional approach. Data were collected by distributing questionnaires to parents and weighing children's weight. Data were analyzed using univariate and bivariate.
Results
Questionnaire results showed almost all respondents (86.7%) have a habit of loving certain types of food. The results are shown in table 1

Table 1. Frequency Distribution of Respondents Based on the eating habits of pre-school children at Islamic Education Foundation Riyadol Mahirin Cimahi Period October to December 2014

<table>
<thead>
<tr>
<th>Eating Habit</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children like certain types of food</td>
<td>26</td>
<td>86.7</td>
</tr>
<tr>
<td>Children eat varied foods</td>
<td>4</td>
<td>13.3</td>
</tr>
</tbody>
</table>

Eight correspondent (26.7%) of children have eating disorders. The result shown in table 2.

Table 2. Respondents Frequency Distribution Based on eating disorders in pre-school age children in Islamic Education Foundation Riyadol Mahirin Cimahi Period October to December 2014

<table>
<thead>
<tr>
<th>Eating Habit</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children with eating difficulties with less than normal weight</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Children without eating difficulties with normal weight</td>
<td>22</td>
<td>73.3</td>
</tr>
</tbody>
</table>

Based on the result of cross tabulation between eating habits with eating disorder in preschool children, from 26 children who have the habit of eating certain types of food and have difficulty eating is eight children and the category of children whose like certain types of food and without eating disorder are 18 children. There is no significant relationship between eating habits with eating disorders in preschool children in Islamic Education Foundation Riyadol Mahirin Cimahi with value of $X^2 = 0.550$ with $p = 0.267 > \alpha = 0.05$.

Although based on statistic test result there is no significant relationship between eating habits with eating disorder, but if seen from univariate result there are 86.7% of respondents who like one particular food type, and there are 26.7% of respondent who have difficulty to eat so that weight less than normal according to his age.

Discussion
Eating disorders are often experienced by children aged 1-5 years. Children usually become difficult to eat because of the increasing activity such as playing and running so sometimes they become lazy to eat. In addition, the pattern of feeding is not in accordance with the wishes of children can cause the child to be difficult to eat, whereas in toddlers occurs the process of growth and development that require nutritional adequacy. Nutrition consumed at the age of toddlers experienced many changes ranging from changes in the form of food ranging from breast milk, fine textured foods and until finally solid textured foods as the main intake of (Liza, 2010, in Nurjanah (2013).

Eating disorder in children are complex and the caused need to be observed. Difficulty eating in children is divided into three factors: loss of appetite, eating disorders in the mouth and psychological influences. Handling eating disorder in children optimally is expected to prevent the

Some possibilities of children hard to eat according to Lukito in talk show "Feeding Difficulty in Children", in Tirtayu Healing Center, Jakarta, Saturday (6/8/2011) the first muscle and nerve disorders that cause motor movement in the area around the mouth is disturbed, Indigestion, acute or chronic infections (tuberculosis, worms, etc.), food allergies, food intolerance, and so on. The third possibility and the most common possibility for children is that it includes "picky eaters" or picky eaters. Judarwanto (2010) describes psychological disorders formerly regarded as the main cause of feeding difficulties in children. Psychological disorders can be regarded as a cause when the eating disorder coincided with the psychological problems encountered. When the psychological factors are improved then the difficulty of eating disorders will improve. To make sure it is difficult, it takes close observation and for a long period of time. Therefore it is only possible for parents to work with psychiatrists or psychologists.

Eating disorder is not a diagnosis or disease, but is a symptom or a sign of irregularities, abnormalities and diseases that are happening in the child's body. Understanding the difficulty of eating is if the child does not want or refuse to eat, or have difficulty consuming food or beverage with the type and amount according to age physiologically (natural and reasonable), ranging from open mouth without coercion, chewing, swallowing until absorbed in gastrointestinal. Both without coercion and without the provision of certain vitamins and drugs.

Conclusion

86.7% of respondents have a habit of liking certain types of food and 26.7% have eating disorders. It suggest: a) Recommend a variety of healthy foods, teach children to get used to eat varies healthy food. Parent need to always provide healthy diet that varies every day so that children do not get bored. So the children do not experience eating disorders: b) Create a pleasant environment when eating. c) Teach children to explore about how to use cutlery. d) Do not panic and immediately give vitamins or bring a child to the doctor for supplement e) It would be better if the child does not want to eat, the parent trying to find the causes.

References


Dini.] Selasa, 9 Agustus 2011.3 Alasan Anak Susah Makan


The Relationship between Hypertensive Medication Adherence and Stroke Recurrence at Neurology Polyclinic in TNI AU dr. M. Salamun Hospital TK II Bandung

Hikmat Rudyana
Nursing Science Department. School of Health Sciences Jenderal Achmad Yani
Email: hikmatrudyanatea@gmail.com

Abstract
There are approximately 9.4 billion people died per year caused by stroke and heart disease. Hypertension is the main contributor of these diseases. To prevent stroke incident, the patient have to control their blood pressure by taking antihypertensive medication. Hypertensive medication adherence is important for the patient with hypertension because hypertension is a kind of disease that cannot be cured, so the patient must take medication for the rest of his life.

Research method used in this study is correlation analysis. 63 respondents were drawn using consecutive sampling. Data analyzed by applying Chi square test, provides score that reflecting the relation between hypertensive medication adherences with stroke incidence.

Research finding of this study shows that there are 7 respondents (11.1%) had high adherence in taking antihypertensive medication, 16 respondents (25.4%) had medium adherence, and 40 respondents (63.5%) had low adherence. There are only 17 respondents (27%) have experienced stroke incidence in the last 3 months compared to the rest 46 respondents (73.3%) who did not experience it. Furthermore, the analysis shows that there are no significant correlation between hypertensive medication adherence with stroke incidence, with p value = 0.518, p ≥ α (α = 0.05).

This study identified other factors, besides hypertensive medication adherence, might causing stroke incidence. For this reason, the author suggest that there is a need to conducting more research using cohort approach to find out the most contributing factors (from the factors that has been identified in this study) which might reduce the possibility of the occurrence of stroke incidence.

Key words: hypertension medication adherence, stroke recurence

Introduction

Riskesdas (2013) stated that hypertension is a State where the blood pressure in the veins increases chronically. It can occur because the heart works harder in pumping blood to meet the needs of oxygen and nutrients in the body. According to Corwin, E, 2009 hypertension is the pressure more than 140 mmHg for systolic and more than 90 mmHg for diastolic. Hypertension can occur due to several factors; unchangeable factors such as race, age, family history, gender. And changeable factors such as obesity, insulin resistance syndrome (metabolic syndrome), less motion, smoke, sodium sensitivity, low potassium levels, excessive alcohol consumption and stress.
WHO (2012) stated that hypertension is one of the diseases that contribute to the onset of heart disease and stroke together became the cause of death and disability number one as well as contribute almost 9.4 million deaths from cardiovascular disease each year. It is also explained by the Bustan in Burhanuddin M, et al (2013) that hypertension is the biggest cause of stroke events, both on the diastolic or systolic blood pressure. In a study conducted by Widjaja in Soebroto L, (2010), the cause of most strokes is hypertension is amounting to 81.7%. According to Corwin, E (2009) a stroke can occur when a high pressure in the brain and lead to hemorrhage or due to an embolus regardless of vessels other than the brain exposed to high pressure.

Hypertension cannot be cured, so as to reduce the risk of complications in cardiovascular and other organs by controlling their blood pressure through health controls regularly, doing a diet low in salt and consuming drugs regularly (Ratnaningtyas & Djatmiko, 2011 in Evadewi and Sukmayanti, 2013). It is also described in a study conducted Moris, et al (2003 in Rosjidi and Nurhidayat 2014), that the decrease in blood pressure became the primary therapy to prevent the occurrence of an attack of heart and stroke. Thus, the control of blood pressure is the main way to prevent stroke.

The results of the Basic Health Research (Riskesdas) in 2007 shows only 0.4% of cases were dutifully taking medication of hypertension so that 76 percent of the public do not know that he has hypertension. This also explained by WHO in Annisa A, et al, 2014 that from 50% of known hypertension patients only 25% that gets the treatment and only 12.5% are treated well.

Compliance with using the drug regularly in hypertension patients is an important pillar. Because hypertension drugs can reduces blood pressure in order to avoid the complications of hypertension in one of the most-namely, a stroke. According to Kamus Besar Bahasa Indonesia, dutifully is like according to the order, obeying orders, disciplined. According to Nursalam & Kurniawati (2007 in Ayu 2014), compliance is a term used to describe the behavior of patients in the drinking cure correctly about the dosage, frequency and time. Medication compliance is compliance in drug or drink regularly taking medication. Adherence to medical treatment is a person's ability to perform medical treatment according to the instructions. This means that dose, time, and manner of administering medications (Yulianti, 2009).

By regular drug use, in hypertension patients, blood pressure will be expected to remain stable; with the biggest complications such as stroke it will be spared. As described by the Bustan in Burhanuddin M, et al (2013) that hypertension is the biggest cause of occurrence of stroke.

According to Saidi, s. et al in Irawan D. S, et al (2014), stroke is a multifactorial disease with various leading cause of disability and death in the developing countries. So a stroke is a disease of the brain in the form of local nerve function disorder and/or global, the emergence of sudden, progressive, and fast and is a major cause of disability and death in the developing countries.

The multifactorial disease in the meaning of the cause of stroke stroke risk factor is that due to several factors, namely the risk factors that can be modified and cannot be modified. Risk factors that cannot be modified include age, sex, race, and history of stroke in the family, history of transient ischemic attack or stroke previously. Risk factors that can be modified include lifestyle

---

**Tabel 1. Hypertension Classification based on JNC – VII 2004**

<table>
<thead>
<tr>
<th>Category</th>
<th>Sistolik (mmHg)</th>
<th>Diastolik (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>&lt;80</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>120 – 139</td>
<td>80 – 89</td>
</tr>
</tbody>
</table>

**Hypertension:**

| Stage 1          | 140 – 159       | 90 – 99         |
| Stage 2          | ≥ 160           | ≥ 100           |

*Source: Joint National Committee On Detection, Evaluation and Treatment Of High Blood Pressure VII (2004)*
i.e. hypertension, diabetes mellitus, other, heart disease, smoking, alcohol, obesity, and the use of oral contraceptives. These factors also affect the incidence of stroke (Wijaya, 2013).

Based on the above considerations, then researchers would like to know whether there is a relationship of hypertension medication compliance with repeated stroke events in patients of hypertension with inclusion criteria are consuming the same anti-hypertension drug content namely Amlodipine in Bandung. This research is expected to contribute knowledge and adding insight on Health Psychology and clinical psychology related to the compliance of patients in taking drugs, too, expected stroke patients can run a healthy lifestyle and take control of other risk factors.

**Method**

The hypothesis is a conjecture of formulation problems or questions researchers. The hypothesis is a provisional answer from a benchmark research, guess, or the proposition while his righteousness would be evidenced in such research (Notoatmodjo, 2010).

Based on the hypothesis in this study was the zero hypothesis (Ho) there is no relationship between adherence to medication of hypertension with the occurrence of stroke. Whereas, the alternative hypothesis (Ha) there is a relationship between hypertension medication compliance with repeated strokes.

The variable is the size or characteristics of which are owned by members of a group with different owned by other groups (Notoatmodjo, 2010). The variable peneltian is the object that will be examined so that we can make sure that the variables we select research already eligible for researched (Budiman, 2013). A variable is an object to be measured or observed others vary from one object to other objects and measurable (Riyanto, 2011).

But in this study consists of free variables (independent) and variable (the dependent). The independent variable is the variable that affects the other variable, meaning that when the independent variable is changed then it will result in a change in another variable (Riyanto, 2011). In this research which is free or independent variable is adherence to medication of hypertension. The dependent variable is a variable dependent variable to research other research (Budiman, 2013). While according to Notoatmodjo (2010) variabel depends, are bound, as a result, influenced or variables that are affected. In this research which is a variable or dependency is an event repeated strokes.

The operational definition is a definition of the variables examined are operational in the field. The operational definition is useful to redirect to the measurement or observation instrument (Riyanto, 2011).

The operational definition of compliance is the level of attention of the patients in performing the treatment on the basis of Morisky Medication Adherence Scale (MMAS) 8. Morisky Medication Adherence Scale 8 (MMAS) is one of the methods used to measure the compliance of patients in the drinking cure which consists of three aspects, namely the frequency of forgetfulness in consuming drugs, deliberate action to stop taking the drug without being noticed by the medical team, and the ability of self control to keep taking drugs (Morisky & Munter, 2009 in Evadewi & Sukmayanti, 2013).

Morisky Medication Adherence Scale 8 (MMAS) consisting of 8 questions that had already been translated into bahasa Indonesia. Determining the answer questionnaires using scale Guttman; where are the answers of the respondents was limited to the two answers, namely Yes or no. The highest value and lowest 8 0. Wayward in category 0 (Maulidia, 2001). The category of medium or moderate in value 1 and 2. Wayward in category worth more than 2 (Morisky et al, 2008, 2012).

The operational definition of incident stroke restart IE whether there is a history of repeated strokes in the last 3 months. These questionnaires using scale Guttman; where are the answers of the respondents was limited to the two answers, namely Yes or no. The category does not (there is no history of stroke incidence in the last 3 months) is worth 0. Category Yes (there is a history of stroke incidence in the last 3 months) worth 1. Hypertension medication compliance with repeated strokes will be resized using the scale comprises 8 items on a scale of medication compliance and 1 items on the scale of incident stroke.
The population in this research is the stroke patients in the hospital’s Neurological Clinic TK. II AIR FORCE Dr. m. Salamun Bandung. The sample in this research totalled 63 people with sample criteria that is consuming the same antihypertensive drug content namely Amlodipine.

Sampling method used is a subject that is all sampling consecutive coming and meet the selection criteria included in the study until the required amount of the subject are met (the student learning centre of Flinders University, 2013).

The location of the research carried out at the hospital’s Neurological Clinic TK. II AIR FORCE Dr. m. Salamun Bandung.

This research is a study of the correlation of analytical design, namely the design of research aimed at finding the relationship between two variables, namely the dependent variable and independent variable. With the main objective to know the relationship between adherence to medication of hypertension with the occurrence of stroke in the hospital’s Neurological Clinic TK. II AIR FORCE Dr. m. Salamun Bandung. As for the approach to this type of research is a cross sectional is a type of research to study the dynamics of correlations between risk factors with effects, by means of approach, observation or data collection at once at one point.

Results

Table 2. Relation between Hypertensive Medication Adherence and Stroke Recurrence in the nervous Hospital Clinic TK. II AIR FORCE Dr. m. Salamun Bandung

<table>
<thead>
<tr>
<th>Hypertensive Medication Adherence</th>
<th>Stroke Recurrence in the last 3 months</th>
<th>Total</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>No 71.4% 28.6%</td>
<td>5</td>
<td>0.518</td>
</tr>
<tr>
<td>Medium</td>
<td>Yes 62.5% 37.5%</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Yes 77.5% 22.5%</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>46 73.0% 27.0%</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

From the results of the analysis of the relationship between the hypertension medication compliance with repeated strokes retrieved that as much as 5 (71.4%) of stroke patients who dutifully in the drinking cure hypertension who didn't suffer a stroke back in 3 months and as much as 2 (28.6%) of stroke patients who dutifully in the drinking cure hypertension who had a stroke back in the last 3 months, as many as 10 (62.5%) of stroke patients who were or are in the middle of allegiance drinking cure hypertension who didn't suffer a stroke back in the last 3 months and as much as 6 (37.5%) of stroke patients who were or are in the middle of allegiance drinking cure hypertension who had a stroke back in the last 3 months, as many as 31 (77.5%), stroke patients who are not obedient in the drinking cure hypertension who suffer a stroke within the last 3 months. The results of statistical tests obtained value p value = 0.518, p ≥ α (α = 0.05). Ho accepted and thus it can be concluded there is no significant relationship between adherence to medication of hypertension with the occurrence of stroke.

Discussion

Hypertension is a disease that cannot be cured and hypertension is one of the chronic diseases that are often followed by other ailments that accompany and exacerbate the condition of the organs of the sufferer. The disease often become the companion of the disease of hypertension among other kecing sweet (diabetes mellitus), insulin resistance (R-I), hyperfungsi thyroid gland (hipertiroid), rheumatism, gout/hiperuricemid/uric acid, high blood fat levels (Hyperlipidemia) (Dalimartha, et al, 2008).

Therefore, hypertension was the forerunner of several diseases, such as stroke, myocardial infarction, renal failure, encephalopathy (brain damage), and seizures. According to
research conducted by Widjaja in Soebroto L, 2010 81.7% of hypertension that caused the stroke. A stroke can occur when high pressure in blood vessels due to hypertension, which is of course the pressures in the brain becomes higher and lead to hemoragi due to an embolus regardless of vessels other than the brain exposed to high pressure (Corwin, E, 2009).

To reduce the complications resulting from hypertension especially stroke, namely by controlling their blood pressure through health controls on a regular basis, doing a diet low in salt and consuming drugs on a regular basis (Ratnaningtyas & Djatmiko, 2011 in Evadewi and Sukmayanti, 2013).

Processing of the results of statistical tests using chi square value obtained p value = 0.518, p ≥ α (α = 0.05). This shows that there is no significant relationship between adherence to medication of hypertension with the occurrence of stroke or it can be concluded that the zero hypothesis (Ho) are accepted.

This is not in accordance with the research conducted by the Andromeda by 2014 which says there is a connection between the uncontrolled hypertension meaningfully with repeated strokes events (p = 0.020) and also according to Tarwoto, et al 2007 tenth patient TIA (transient ischemic attack) or stroke previously not getting or doing a good treatment will experience a stroke in the next three months and a third will suffer a stroke within five years post stroke first. And according to Friday (2002) that uncontrolled hypertension will lead to occurrence of stroke.

Repeated stroke occurrence does not have a single cause, but rather many causes (multifactorial causes) that can cause a stroke. The chance of the occurrence of stroke will increase with the more risk factors a person owned. The risk of stroke decreases with an increase of repeated quality control and control of risk factors (Friday, 2002 in Andromeda, 2014). Someone with a history of stroke has a greater tendency to have stroke risk factors especially when a reset is not be solved properly. Because it attempted the prevalence of secondary covering healthy lifestyle and control of their risk factors such as hypertension, diabetes mellitus, heart disease, TIA (transient ischemic attack) or stroke before, hiperkolesterolomi, infections, obesity, smoking, alcohol, the use of oral contraceptives. Management of post stroke so as not to be repeated strokes is not easy, this is due to various factors, among others, karenan due to intrinsic factors (sufferer) which concerns the modification of life as well as business factors extrinsic covering environment and the efforts of medical personnel in helping control the risk factors to prevent stroke (Wijaya, 2013, Misbach, 2011 in Andromeda, 2014).

Based on the results of interviews with stroke patients in the hospital’s Neurological Clinic TK. II AIR FORCE Dr. m. Salamun Bandung, there are respondents who say dutifully in the drinking cure but still hit a stroke back within 12-13 weeks later (3 months later). When the author asked other risk factors that can affect the stroke, it turns out that the respondents admitted smoking in a day spent 3-4 packs of cigarettes and consuming coffee black 3-5 times a day. Many respondents thought that with blood pressure medication and other illnesses can be resolved so that the respondent keep doing unhealthy lifestyles such as smoking, drinking coffee, eating foods that are high in cholesterol and salt and not exercising. It is increasingly strengthening that stroke is a disease caused by some yg multifaktorial conditions diseases and lifestyles. So the necessary secondary prevalence not only pay attention to one factor the risk only. But keep taking medication compliance should not be neglected because hypertension can not be healed, just get with the health controls on a regular basis, doing a diet low in salt and consuming drugs on a regular basis (Ratnaningtyas & Djatmiko, 2011 in Evadewi and Sukmayanti, 2013). Compliance with drinking the drug regularly in sufferers of hypertension is an important pillar. Because hypertension drugs can reduce blood pressure in order to avoid the complications of hypertension in one of the most-namely a stroke.

From the results of the data processing of compliance hypertensive drug obtained by drinking that very few respondents who dutifully in the drinking cure hypertension, that as many as 7 people (11.1%), and a small percentage of the respondents who are currently in the middle of allegiance or drink medication of hypertension, that as many as 16 people (25.4%), as well as most of the respondents who are not obedient in the drinking cure hypertension, that as many as 40 people (63.5%). It shows there are still many wayward stroke sufferers in drinking antihipertensi drugs. This can be caused by a variety of causes such as low socio-economic status, lower education, poverty, unemployment, lack of social support, living in unstable conditions,
transportation that are not affordable and expensive, an expensive medicine, culture and beliefs about disease and therapy as well as family dysfunction (Prihandana, 2012).

From the results of processing of data obtained by repeated stroke occurrence that most respondents did not have a history of repeated strokes in the last 3 months, i.e. as many as 46 people (73.3%) and a small proportion of respondents who have a history of stroke incidence in the last 3 months, that as many as 17 people (27.0%). Although the incidence of repeated strokes occur not only because of the wayward in the drinking cure, this thing ought to be controlled so that doesn’t happen. According to Siswanto, 2005 recurring stroke criteria include; (1) different neurologic deficit with his first stroke; (1) incident that covers the Anatomy or areas of different blood vessels with the first stroke; (3) this incident have sub type a different stroke by stroke.

Conclusion

This shows that every stroke, a condition experienced by patients will be severe, because the deficit affected different neurologik with the first stroke. If neurologic deficits are exposed to different from the first stroke, meaning events that covers the anatomy of the blood vessels or the region is also different with the first stroke.

Many factors influence the occurrence of stroke, not only compliance with medication alone. Therefore, further research is expected to conduct a study analyzing the factors to look any factors that can minimize the incidence of stroke.

References

Annisa, dkk. (2014). FAKTOR YANG BERHUBUNGAN DENGAN KEPATUHAN BEROBAT HIPERTENSI PADA LANSLIA DI PUSKESMAS PATTINGALOANG KOTA MAKASSAR. ¶
http://repository.unhas.ac.id/bitstream/handle/123456789/9370/A_%20Fitria%20Nur%20Annisa_K11110020.pdf?sequence=1 Diunduh pada tanggal 04 Januari 2015


http://repository.unhas.ac.id/bitstream/handle/123456789/5426/MUTMAINNA%20B_FAKTOR%20RISIKO%20KEJADIAN_140613.pdf?sequence=1. Diunduh pada tanggal 05 Januari 2015


Hypnoparenting Effects Towards Fatigue Prevalence as an Impact of Chemotherapy among Pediatric Patients with Acute Lymphoblastic Leukemia

Sapariah Anggraini
Suaka Insan School of Health Sciences
E-mail: Safa_anggraini@hotmail.com

Abstract

Fatigue, is one of the symptoms of acute lymphoblastic leukemia after chemotherapy treatment. The management of fatigue among pediatric patients with lymphoblastic leukemia does not become a priority apart from the cancer management itself (Mitchell, 2010). Hence, it is necessary to put an attention towards this issue by giving another complementary therapy for the patient called hypnoparenting. By implementing hypnoparenting will decrease the level of fatigue because of the chemotherapy process. It will help the patients and family to reduce the drugs consumption and prevent any further complications. To determine the effect of hypnoparenting towards fatigue prevalence as an impact of chemotherapy among pediatric patients with Acute Lymphoblastic Leukemia. This research utilized quasi experiment before after study. The population of the study was pediatric patients (5-12 years old) who suffered by Acute Lymphoblastic leukemia under chemotherapy treatment at RSUD Ulin Banjarmasin. The study was started on Mei 2016 until June 2016 with the total participants were 30 pediatrics patients. The data analysis used dependent t-test with 95% CI and p value <0.05. According to the mean score of 30 patients in the range of age 5-12 years revealed ; before and after hypnoparenting implementation, The mean score was different 5.3 with standard deviation 7.013 and p value 0.000, 95% CI (2.681 – 7.918). There was a significant difference on fatigue level among the patients before and after hypnoparenting implementation.

Key words: Acute Lymphoblastic Leukemia, children aged 5-12, fatigue, hypnoparenting

Introduction

According to Isselbacher (2000), the type of cancer with the highest prevalence in Indonesia as a developing country is Acute Lymphoblastic Leukemia (ALL). With the number of prevalence is 20, 8 patients in a million for a year. Generally, the treatment for ALL is chemotherapy. It consists of the first stage that is induction stage which is occurs in a hospital for 4-6 weeks, follows by consolidation stage and maintenance stage, with total treatment during 2-3 years (Ward et al, 2014). One of the symptoms of chemotherapy treatment which is experienced by the patients is fatigue/tiredness. According to Yeh et al (2008) revealed the main problem among ALL patients under chemotherapy treatment is tiredness. They will experience this uncomftorted falling in several days after that process. Hemoglobin and corticosteroid consumption are the related factors of fatigue until it achieves the peak of that symptom in 5 days after chemotherapy (for some under steroid therapy in the same time).

This is a common phenomenon recently, and this issue does not a priority in the management of cancer patient specifically in reducing the side effect of chemotherapy treatment. The pediatric patients are the vulnerable population who being ignored regarding that problem (Mitchell, 2010). Bower et all (2014) explained; there are some complementary therapy to reduce the malaise among ALL patient. One of the interventions is body and mind intervention such like yoga, acupuncture, massage, touch therapy, music therapy, relaxation, hypnoparenting, etc.
Complementary therapy with a special purpose to increase the level of relaxation of the patient due to chemotherapy is hypnoparenting. Hypnoparenting works to create unawareness among the pediatric patients. It stimulates the neurotransmitter or chemical material in the brain to relay, modulate, and press the signal between the neurons and other cells such like: serotonin, dopamine, norepinephrine, and noradrenaline. The chemical materials produce the hormones to being absorbed by the hippocampus and distributed to the whole brain cells. One of the hormones produced is melatonin, which could help to relax, feel comfort, and sleepy.

The implementation of hypnoparenting is expected to decrease the tiredness due to chemotherapy procedure. It will have a good impact for the patient. Hence, the nurses could avoid the tiredness experience of the patients and improving the quality of nursing care specifically for the patient with ALL. Based on that phenomena, the researcher is interested to conduct a research about Hypnoparenting effects towards fatigue prevalence as an impact of chemotherapy among pediatric patients with Acute Lymphoblastic Leukemia.

Method

Ethical Statement

Ethical committee at RSUD Ulin Banjarmasin has assessed and given the ethical approved regarding the study protocol. Generally, this study follows the ethical principal for the specific health study. The participants were willing to join in this study and they were given the explanation and socialization about the study (Including informed consent signed) before the study was conducted.

Study Design

This study utilized the quasi-experimental design before-after study. The population in this study was pediatric patients with the range of age 5-12 years old who suffered by ALL under the chemotherapy treatment in RSUD Ulin Banjarmasin. Total of the population were 30 patients.

Participants

Sampling method used exhaustive sampling. The participants of this study were pediatric patients with the range of age 5-12 years old who suffered by ALL under the chemotherapy treatment in RSUD Ulin Banjarmasin from May until June 2016. The exclusion criteria were: ALL patients who do not follow the chemotherapy treatment and ALL patients under chemotherapy treatment with glasgow coma scale below 13.

Intervention

ALL patients with inclusion criteria would be measured the level of tiredness to decide the first score by utilizing Multidimensional Fatigue Scale. Then, they were intervened by hypnoparenting. Lastly, the researcher measured the level of tiredness after the intervention. The hypnoparenting intervention was done 3 times a week for 10-15 minutes. The score or the level of tiredness before and after the intervention would be compared.

Multidimensional Fatigue Scale

Pediatric Quality of Life Inventory (PedsQL) Multidimensional Fatigue Scale administered to measured tiredness/fatigue level (Vami,2015).

Pediatric Quality of Life Inventory (PedsQL) Multidimensional Fatigue Scale is the instrument to measure the tiredness/fatigue level among pediatric patient.
Fatigue could be assessed according to the report from the patient itself. This instrument can be implemented for pediatric patient with the range of age 5-12 years old. It consists with 18 item questions including three dimensions such like; fatigue in generaly (6 questions), fatigue during sleeping or napping (6 questions) and fatigue in cognitive response (6 questions). The patients were asked about their fatigue intensity in a week by likert scale 0-4. This questionnaire would be filled up by the researcher according to the response from the respondents. If every question were answered with “never” then the score was 0; “almost not a problem” was 1, seldom was given 2 point, and often was given 3 point, and lastly was “always” with 4 point. For patients less than 5-7 years were asked about the fatigue intensity during a week with 3 point in likert scale.

Hypnoparenting

Hypnoparenting was done according to standard operating procedure (SOP). It was implemented in 10-15 minutes. It divided into 3 stages: Pre-induction stage, trance, autosuggestion, post-hypnosis, and termination. (Swadarma, 2014).

Statistic

Data were analyzed to measure and determine the fatigue level of the patients before and after the hypnoparenting process by administering paired-t test with 95% CI and p value <0.05.

Result

The participants were 30 pediatric patients allowed by their parents to join the study. The characteristics of the participants were:

<table>
<thead>
<tr>
<th>Tabel 1 Respondent characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characterize</strong></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>5 – 7 years old</td>
</tr>
<tr>
<td>8 – 12 years old</td>
</tr>
<tr>
<td><strong>Protocol type of chemotherapy</strong></td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Standard</td>
</tr>
<tr>
<td><strong>Chemotherapy Stage</strong></td>
</tr>
<tr>
<td>Maintenance Stage</td>
</tr>
<tr>
<td>Intensification Stage</td>
</tr>
<tr>
<td>Consolidation Stage</td>
</tr>
<tr>
<td>Induction Stage</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
</tr>
<tr>
<td>No Pain</td>
</tr>
<tr>
<td>Low Pain</td>
</tr>
<tr>
<td>Moderate Pain</td>
</tr>
<tr>
<td>High Pain</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
</tr>
<tr>
<td>No Anxiety</td>
</tr>
<tr>
<td>Low level anxiety</td>
</tr>
<tr>
<td>Moderate level anxiety</td>
</tr>
<tr>
<td>High level anxiety</td>
</tr>
</tbody>
</table>
The average scoring fatigue result, before the hypnoparenting implementation was 24.13 with standard deviation 11.89. The lowest score was 4 and the highest score was 48. The average scoring fatigue result after the hypnoparenting implementation was 18.83 with standard deviation 10.23. The lowest score was 6 and the highest score was 48.

According to the average scoring among the patients in the range of age 5-12 years old with ALL before and after hypnoparenting showed a different mean score equal to 5.3 with standard deviation 7.013. P value based on statistic result was 0.0003 with 95% CI (2.681 – 7.918). Hence, the conclusion would be; there was a significant difference on fatigue level among the patients before and after hypnoparenting implementation. The different average scoring of fatigue level was divided into three dimensions such like; general fatigue, fatigue during sleeping/napping, and cognitive fatigue. It described in Table 2.

Table 2. Average scoring of fatigue level before and after hypnoparenting

<table>
<thead>
<tr>
<th>Mean</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fatigue</td>
<td>Before – After</td>
<td>2.4</td>
</tr>
<tr>
<td>Rest fatigue</td>
<td>Before – After</td>
<td>2.3</td>
</tr>
<tr>
<td>Cognitive Fatigue</td>
<td>Before – After</td>
<td>0.6</td>
</tr>
<tr>
<td>Total Fatigue</td>
<td>Before – After</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Discussion

According to the data, the average scoring of fatigue level was 24.13 and majority the respondents were in moderate fatigue level. Then, right after hypnoparenting implementation, the level of fatigue decreased into 18.83 and majority the respondents were in low fatigue level. Kwekkeboom et al., (2010) investigated the intervention of mind-body against pain, fatigue, and sleep disorders among cancer patients. The type of mind-body interventions were; relaxation, hypnosis, cognitive-behavior therapy, meditation, music therapy and virtual-reality therapy. The study mentioned that those interventions could decrease the pain level, fatigue, and sleep disorders among the cancer patient.

The researcher assumes, the hypnoparenting is a complementary therapy which categorized into mind-body intervention. Because of the purpose of this therapy, is to increase the mind capacity and influence the body function and its symptoms. Hypnoparenting is one of the ways to communicate with patients’ unconscious mind by giving positive suggestions to change the behavior of the patients.

According to Roy’s theory about “Adaptive System”, which is related to fatigue level and hypnoparenting intervention. Fatigue is a main factor influences the functional status and the quality of life of the patients. It has a Many negative effects caused by fatigue, it will decrease the health status of the patient physically and biologically, hence it is so important to influence the patients to realize their potential adaptation skill. Adaptation process by using coping mechanism is utilized for self-balancing against any changes around. To improve the adaptation process the changes internally and externally, the patients need an interaction support and intervention from the nurses. Nurse has a big role to assist the patient while experiencing fatigue feeling. One of the interventions to facilitate the patients and help them to cope that feeling is by using complementary therapy such as hypnoparenting.

According to the evaluation result, was done by the researcher among 30 respondents
after experiencing hypnoparenting implementation; 15 respondents said that; their sleep pattern was changed. They supposed to get difficulties in sleeping or often wake up in the middle of the night. After hypnoparenting implementation, the patients became more comfortable and had a good quality of sleep. 18 respondents reported they could start their daily life, such like sitting on the bed, smiling and laughing when other people are starting a conversation with them. This report showed that hypnoparenting activity helps the pediatric patients to create their coping mechanism within their selves in order to cope positively and adaptively towards physical and psychological changes.

Based on the research result, the fatigue level in cognitive dimension did not show a different significant before and after the hypnoparenting implementation. The evaluation result showed, only 5 respondents experienced the changes in cognitive dimensions after hypnoparenting treatment. Because of the process to change the concentration of the patients might take a long time and regular treatment.

Leukemia & Lymphoma Society (2013) mentioned some factors cause fatigue felling among the patients with cancer, such as the disease itself and the effect of the treatment. Another predisposition factor as a trigger is anemia. Anemia causes the decreasing of the oxygen in the body, nutrition, and energy, hence the anemia patient experience the tiredness. Cancer would be related with anemia and it could create a bad impact within the body and trigger many complications including: fatigue, dyspnea, palpitation, dizziness, and lower cognitive function (Wong, 2008).

Lower cognitive function among the cancer patients is signed by concentration disorder, having a problem to finish the task in hand, decreasing memory, and easy to forget. Leung et al., (2000) identified the impact of tiredness within the patients after recover from the cancer disease such like; growth disorder, decreasing the memory, short-term inability, study disorder, hormonal problem and another complication including secondary cancer.

The limitation of this study; there was not a blinding method or another person apart from the researcher who did a measurement before and after the hypnoparenting intervention. The researcher also did not have enough time to collect many data in order to get many respondents more than 30, hence the respondents’ characteristic were not vary. The implementation of hypnoparenting was not done in a special room because of the room limitation in the hospital. Hence the implementation was finished in the pediatric ward with many other patients with their parents in the same room and the researcher could not control the crowded around that room.

**Conclusion**

There was a significant decreasing the average score of fatigue level before and after the hypnoparenting implementation. In term of general fatigue and fatigue during sleeping/napping, the effect of hypnoparenting could decrease the fatigue level, in contrary the implementation did not work to decrease the cognitive fatigue.

**References**


Medical Sciences, S53–60.


doi:10.1016/j.jpainsymman.2009.05.022.


Mother Home Care Patterns for the Care of Their Children with Autism: Grounded Theory Study

Dania Relina *, Blacios Dedi, Oop Rope’i
1Suaka Insan School of Health Sciences
2Immanuel School of Health Sciences
3Stikes Jenderal Achmad Yani Cimahi
*dania_reлина@yahoo.co.id

Abstract
Inappropriate treatment for the children with autism could create further permanently disorder. Lack of standardized home care guidelines for the care of autism patients in Indonesia impedes the appropriate treatment for children with autism. This study aimed to develop the new concept framework for home care pattern children with autism at home. The data gathering involved 9 participants to be observed and deep interviewed complete with field record and study literature. The result of this study was utilized to create new standard operating procedure for autism treatment at home. By giving further explanation regarding: the preparation before the consultation, early procedure after diagnosed, further treatment, information for the environment around, support treatment for successful therapy, therapy for children to be taught by the mother, fulfill the human basic needs, diet, habituation therapy, food serving suggestion, the continuity of consultation with the doctor and psychologist, ways to prevent misperception in disciplining the children, ways to overcome the boredom and stress, treat the patient’s siblings, and development of parent support group. This study provided the pediatric nurses to increase their knowledge and capability in supporting the parents and socializing the autism and it is treatment.

Key words: Care, children with autism, grounded theory, mother, pattern

Introduction
Inappropriate autistic child care can lead to the disorder development among the child itself. Lack of standardized autistic child care pattern guide for mothers at home could trigger a deceleration or inappropriate treatment. Parents of autistic child can not just rely on uncommon care guide that sometimes the implementation does not fit with the culture of the child’s life in Indonesia. Every therapy house for children with autism in Banjarmasin and General Hospital (Rumah Sakit Umum Daerah Banjarmasin) are lacking in providing adequate information about the standardization of autistic child care pattern guide for mothers at home.

In this research, the researcher was trying to continue the previous research in Banjarmasin City, South Kalimantan Province, in order to determine the solution against the existing issue. The previous research is done by phenomenology approach. It was unable to produce the guidance for autistic child care pattern. The researcher, highlighted this problem to conduct a further research about “how did the mother do in taking care of autistic children at home?”. The purpose of this research is to develop the concept structure of care pattern which has given by the mother to autistic children at home.

Methods
This research was administered qualitative design with grounded theory approach. participants are the mothers of autistic children in Banjarmasin. The data were collected through observations and in depth interview with observation and interview method. Observation was done in one month to observe the autistic child care pattern by mothers at home. The observation is done when the
participants were taking care of their autistic children, starting from when the children awake till they sleep. Another instrument that being used to collect the data is in depth interview. This guideline contains of 14 questions about care pattern. The instrument was arranged by the researcher with the formulation of several theories from Orem’s Self Care Deficit Theory and Becoming Mother Theory from Mercer. The data were analyzed with Colaizzi thematic analysis.

Results

The results of the study identified ten care pattern themes, such like:

1. **History of pregnancy and childbirth disorder by the mother of autistic children**

   “The baby was fine during the hemorrhage period, so I was told to give birth at the hospital. It was almost 24 hours, still in contraction but it was on full opening of uterus, and starting to fetal distress. The nurse put me an oxygen mask, the amniotic fluid was decreasing and the meconium was already out. My son was born with jaundice appearance but the doctor said that I can bring him home and told me to always bring him outside to get warmth. But it was raining season, so I decided to warm the baby with the blue light in the hospital.”

2. **Alleged cause of children with autism from mother’s point of view**

   “Some people said children can become autistic because disorders when giving birth or stressed during pregnancy... I was stressed during my pregnancy because of my mother in law... I fell down and had minor bleeding when I was in the third trimester of pregnancy, but there was no problem when I checked it... During pregnancy, I never got my desired food... My child was remain silence after the fever… it might be caused by mercury-exposed food... The doctor said that this might caused by the minor bleeding when I was fainting. My child’s allergies started to form when he/she was introduced to cow’s milk... At the age of 1,5 years, he/she likes to watch YouTube video. I gave that in order to prevent him/her from crying. At that time, the eyeball and his/her speak became less-focused....”

3. **Efforts made by mom to autistic children**

   “I ‘googled’ about signs of autistic children, some signs are existed on my child... I took him/her immediately to Child Growth and Development doctors and diagnosed his/her autism and attempted biomedical check...”

4. **Mothers’ feelings and hopes to their autistic children**

   “It was really sadden me, but I let it be... I was never felt ashamed and overwhelmed… If my child had a therapy earlier, he/she might cured faster… I do not want people to differ my child from the other normal children... I wish my child stay healthy, learn to talk fast and be smart like the other normal children... I also hope my child can be an independent, and responsible child and also easy to adapt with his/her environment.. It should be a health education for parents of autistic children, a lecture or seminar about a suitable food and a daily care pattern for the children...”

5. **Source of information to increase mothers’ knowledge in taking care of autistic children**

   “Sharing information with mothers regarding therapy house and apply it to my child... But I do not apply all of them because I know the most which is suitable for my child... I gathered some information from the therapy house, and I also took a course about guiding children with special needs on pre-school in Surabaya... I also received the information from doctors,
biomedical results and google... but there is no specific book about educating children with special needs. I just read a book about how to make nutritional food for autism children...”

6. Mothers’ dominant role in taking care autistic children

“I discussed it with my husband, but I take the most dominant role in taking care my child.”

7. Supporting and inhibiting factors of taking care autistic children

“Supports from family. My husband provides the needs for me and my child... Some family members recommended me to stop giving therapy to my child because it separates me and my child, but I do not do it.”

8. Communication method and act of giving commands or punishments to autistic children

“I am more decisive rather than my husband when it comes to educating my child and I always try to be consistent with this method. I must show my influence to my child. If I make a promise to my child, it has to be consistent.”

9. Motivations and rewards to autistic children

“I always motivate my child with the compliment. For example when my child was tired and asked to be fed. At first I followed the request then I said “good boy! Now try to eat it by yourself... You’re a smart, clever kid.” And finally he/she did it by himself/herself. I give a reward with a hug and compliment... Sometimes, I said “hooray!” and I kissed him/her too, compliment by clapping hands, or even teased him/her with candies... I also give compliments if he/she write something correctly (with claps and said “hooray!”)... The point is the children are still needed compliments. I also confirm his/her act by giving two thumbs up as a compliment too. But I never promise a gift to my child...”

10. Autistic child’s potentials that can be developed

“He/she likes to write letters, from A to Z in a row, but nobody teach that before... He/she also likes to draw and arrange television’s logos such as Trans 7, Metro TV, RCTI...”
Discussion

The researcher attempted to formulate the SOP of autistic child care for mother at home, based on the research and from the expert consultation with pediatric specialist nurses, nerve specialist doctors, child neurologist specialist doctors and child psychologist.
Standard Operational Procedure (SOP) for caring the suspected child with autism by mother at home based on this research explains about:

1. Mother/parents preparation when consulting the doctor
   a. Prepare the question list. Try to be honest as possible when explaining child’s situations, it will help the healing for the child.
   b. Start the question with the format:
      1) Ask the doctor about child diagnosis and where to find the further information
      2) Question about education, can include of what therapy that can be done, where and whose the person that competent to the related therapy.

Standard Operational Procedure (SOP) for caring the child with autism by mother at home based on this research explains about:

1) First procedure when a child is diagnosed with autism

2) Advanced care to autistic child

Parents will train every family member and babysitter that involved in caring and how to find the best way to handle the child. Parents are responsible as a good manager in managing people that take part in child care. Advanced care to children diagnosed to autism are:

- Keep the good communication with pediatrician, teacher in school and child therapist, also with people who are competent on handling autism
- Be honest and be open when it comes to communicating child’s conditions and his/her development, never feel ashamed or cover things that is supposed to be told because it will inhibit the healing that can be given effectively by those who are expert in this particular field
- Come to the right information center for children with autism and gather information about programs, doctors, schools, psychologists and nearest and accessible therapy houses, also information about autistic child care
- Come to therapy houses for children with autism and get a suitable care program for children
- Gather information about autism from books, browsing from internet, attend to a seminar, workshop, and discussion with competent professionals
- It is really important to join with parenthood with the same cases, with those who have autistic children, because they can share about care method which they have done, good therapy houses, schools with programs for autistic children or school of inclusion, autistic child care at home and the most important thing is they have a support group from parents with similar problems so that able to support each other and realize that you were not alone facing autistic child and everything can be handled together
- Manage finances and if it necessary, make financial plan related to child care
- Keep the solidarity with husband/wife as a team to optimize child’s growth and development.

2. Information about the child that has to be spread to the neighborhood

3. Mother/parents action to support the therapy successfulness

The success of therapy are supported from 3 R (Routine, Repetitive, and Regular). Routine, gives the clear structure to the child, what time he/she will start the therapy and what time it will be over, in one time allocation every day. With this, the child will be understand more of what he/she about to face, so they won’t be afraid. Repetitive, purposed so that the child will have a chance to
try as many times as possible before they possess the ability that has been taught. The repetition makes the child more confident to try. Repetition makes the possessed skill/ability, become an automated things that can be done in the future. Regular, makes the child calmer because he/she used to the regular therapy. The often the child used to regularity, the easier for him/her to understand of what to do.

4. Therapy technique mother can teach by herself to her child at home as the advanced therapy from the therapy center.

5. The method to train fulfillment of basic human needs on child with autism

6. Diet therapy on child with autism

7. Habituation/rigidity therapy on child with autism

8. Food serving suggestions for mother on child with autism

9. The importance of routine consultation with doctor and psychologists to know the child improvement and to evaluate the program according to the potential of the child.

10. How to solve the opinion differences between mother and family/sisten in discipline the childern.

11. Way to solve boredom and stress on parents of autistic childern

12. Mother ways to do child pattern to siblings of autstic child

13. The importance of parent support group

14. The importance of parent support group

The research result produced 10 themes of autistic child care pattern for mother at home, the results are as follows:

a. **History of pregnancy and childbirth disorder on mother of autistic children**

Researchers look at the concerns and allegations arised about the cause of the occurrence of autism associated with a history of pregnancy and maternal childbearing disorders of children with autism actually not all true. The occurrence of autism in the disturbances, steroid secretion disorders , and blood flow. Various psychiatric disorders may also arise eg depression, schizophrenia, Down syndrome, Alzheimer's, autistic disorders, ADHD, etc.

b. **Alleged cause of hildern have autism from mother’s point of view**

c. **Efforts made by mom to autistic children**

All participants/mothers take their children to health care to confirm the diagnosis of autism in their children, although there are three participants who first take their children to the therapy house, then to the doctor. One participant took her child to a doctor but did not buy prescribed medications due to limited funds and assumed that her child was okay, thus assuming her child did not need the medication. Nine participants are fast enough in handling their children and receive all suggestions received from others as well as information from the internet.
d. Mothers’ feelings and hopes to their autistic children

The results of this research indicates that the mother experiencing stages of refusing or grieving and reached a stage to accept the fact that she has children with autism.

Participants commonly found similarities in the final stages of grief as described by Kubbler-Ross (2007), Collins (2008), where the final stage of grief is the receiving stage. This stage is marked by the return of energy that has been lost during the process of grieving, improving decision-making and confidence and planning how to solve problems. In this research the family feel grateful and able to understand the condition of the child and feel happy when seeing the development of children’s ability to be better. This will foster the ability of families to be able to adapt to the existence of children with autism so as to decide and plan ways to care the children with autism. Parents have accepted their child's condition, so they are more comfortable in dealing with the behavior and needs of their autistic child.

This research identifies the hopes of mother to child with autism that is child development. Child independence is a major hope for mothers with children with autism. The independence of children living with autism is divided into two groups, the optimal development of children and increased public awareness of children with autism. Optimal development of children is divided into five categories: the behavior of children, improving rough motor skills, improved fine motor skills, improved cognitive abilities, and improved language skills.

These hopes are the desire of the family to improve the ability of children to achieve a better life for children with autism and the families themselves, especially in terms of skills mastery that have not owned by children with autism, so that after the child mastered a capability that became the family's hope, the motivation will grow during caring the children with autism, and families will grow new expectations of the children's abilities.

Mothers/parents acceptance to children with autism is influenced by supporting factors from extended families, family financial capacity, religious background, education level, marital status, age and support of experts and the general public. The nine participants participate in the care of their child with autism, ranging from ensuring the doctor’s diagnosis, fostering communication with the doctor, seeking another doctor if the doctor is considered less cooperative, telling the truth when doing consultation about the child’s development, enriching the knowledge, and assisting while the nine participants did not have much time to join the Parent Support Group and lack of information about it.

e. Source of information to increase mothers’ knowledge in taking care autistic children

In this research, all participants were very actively seeking information on how to take care children with autism by mothers, both from doctors, therapists, schools, from mothers who are also have children with autism and also the internet, and almost all participants adhered to implement the treatment programs, therapy programs and positive suggestions received. Participants who are not too obedient and often violate the treatment program and child therapy program, only participants 5. Participant number 5 does not pay for her child's neural stimulus drugs, because she considers her son is not sick. All participants increase their knowledge in caring for children with autism by seeking information from people around and experts, as well as from reading from books and online media. All the ways that mothers have done still can not answer the curiosity about the correct way to care for children with autism while at home by the mother or caregiver.
f. Mothers’ dominant role in taking care autistic children

In this research benefited from the treatment actions they performed consistently, just as the child understood the rules clearly. This is in line with the statement from Reece (2007) which is a consistent environment is the best tool for children with autism to learn. Consistency in daily routine, discipline, communication, social interaction, and experience all contribute to strengthening their learning environment. Children with autism more often have difficulties in transferring what they learn from one experience to another. There are several things to consider such as child's temperaments, individual needs, schedules and commitments. Routines in children with autism provide them the opportunity to predict everyday events that can make them feel safe. Consistency in this research is very beneficial by participants when they see their children able to be given roles and responsibilities in accordance with its ability. The behavior or closeness of the mother-child relationship and the competence of the child is one of the goals of the "becoming mother" model according to Mercer. Another purpose is the cognitive or mental development and child health (Tomey & Alligood, 2014).

g. Supporting and inhibiting factors of taking care autistic children

Families with autistic children who get good social support from family and social systems will experience a positive impact on health and emotions. The source or origin of the support gained by the autistic children's mothers in the study came from families and the environment. Family support comes from the family members and extended families of participants, husbands, other children, parents, siblings and cousins, while support from the environment comes from people around mothers and community organizations, caregivers, teachers and autism education foundations.

The results of this research indicate that the role of husband is very significant in caring children with autism. Husbands are caring the mother of children with autism, but there are 3 participants whose husbands do not care about the child's care, simply delegate to the mother in full, so that it causes fatigue and boredom to the mother. Father's less concern according to because the father often hide feelings, anxiety and bury anger and avoid problems that are in the house so choose to work longer and outside the home environment. The support gained from the participants is more than the other children, siblings, cousins and parents. This is partially similar to Koesoemo’s (2009) research findings which suggest that social support as a form of family needs in caring for children with autism comes from parents and children. Support comes from the Family, friends and neighbors. Other sources of support authors identified in this study were caregivers, teachers and autism education foundations.

This research revealed that the form of support received by mothers in caring for children with autism are in the form of informational support and instrumental support. Informational support obtained by the mother is the provision of information related to autism, advice, type of informal education and type of therapy for children with autism, delivered both directly and through the television media, while support awards given by the autism education who would follow the advice of the mother of the child with autism to give homework every end of school classes so that children keep learning even at home.

Obstacles are various things encountered and lead to difficulties for mothers in caring for children with autism. Sources of obstacles are grouped into four: barriers derived from mothers, children, fathers and the environment around children, neighbors/peers. Barriers derived from the mother are identified into four parts, physical, psychological, financial and time. Maternal physical fatigue is often a constraint in the care of children with autism. Mother must always have enough stamina,
because caring and accompanying children with autism will drain physical energy. This is supported by the results of Inus’ (2007) research that effective treatment takes a lot of time and energy.

Excessive behavior shown by children with autism when taken to public places often cause others disturbed, this makes the mother feel afraid or anxious when bring autistic children, as well as when going to certain events. In this study also identified that children with autism are unpredictable, tend to be angry, and unable to control emotions, which according to American Psychiatric Association (2013) it becomes an obstacle for the mother, because the mother feels rejected when what has been done to try to understand the child Ignored by the child, but on the other hand the mother also does not want to ignore child.

Lack of independence in children with autism is also an obstacle in treating children with autism, because mothers have a sense of concern that can not leave children with autism without anyone's accompany, this is the same with the results of research Inus (2007) that parents posses worries at Children with autism. This causes the mother to have limited time to socialize outside the home, this also can cause boredom to the mother. Obstacles are also felt by the mother because of the attitude and behavior of the father who is less supportive so that mothers feel a sense of greater responsibility, and the attitude of child's peers who like to hit, often harassed and do not want to hang out with them so that the mother feels the child with autism shunned by The environment.

This research identifies ways to overcome problems when caring children with autism with the form of attitude and action of the mother. Mother's attitude to overcome the barriers generated in this study is divided into three parts, namely praying, resignation and patience, while the mother’s actions overcome obstacles are divided into six parts, namely admonishing children, controlling child behavior, restrict child interaction, give punishment to children, telling stories with friends who are also have autistic children as well as a child's teacher, and cries. This study is different from what has done by Koesoemo (2009) which identifies three ways to overcome problems when caring for children with autism, namely modification of ways, coping mechanisms and family empowerment. American Psychiatric Association (2013) states that there is no definitive method guidance on how to deal with must be flexible and open minded to the various options available, and whenever possible should be tailored to the conditions of the child autism while maintaining the strengths, weaknesses and needs of children with autism.

h. Communication method and act of giving commands or punishments to autistic children

The results of in-depth interviews of participants with autistic children showed there was an variation of expressions in how to communicate and the mother's actions in giving orders or punishment to children with autism. Mother as a participant in this study revealed her response with various statements. Participants say how to communicate and act mothers in giving orders or punishment to children with autism is supported by two categories: firm and consistent.

Parenting communication patterns with autistic children according to Boham (2013) are: Autism handling by parents at home is initiated by parents seeking information about autism and the information is mostly obtained from listening to the radio, reading magazines, watching TV, articles, newspapers and Internet and sharing with parents of fellow children who experience autism disorder and then proceeded to consult a doctor, a psychologist. Then in the academic field, children brought to a special school that is extraordinary school for children with autism. Parents and families understand that autism disorders in children is a disorder in the aspect of socialization so that the child's behavior has difficulty or delayed in making relationships or mutual interactions with others, including hanging out with peers so that children seem to prefer to be alone or live in their
own world and interference in the communication aspect so that children have difficulty or delay in speaking aspects so it is difficult to be able to balance communication with others and show repetitive or repetitive behavior. Some parents directly handle autism children at home, but lack the clear guidelines in doing handling programs including communicating exercises so that the programs performed depend on the programs implemented at the school and the parents just continue it and even some parents who hands the child's handling at home to caregivers and brings in a therapist like a teacher to provide home therapy in private. The pattern or the way parents communicate with children at home is through obedience practice followed by eye contact through their respective settings and when two things happen the child will be rewarded such as compliments and hugs, then followed by pronunciation of letters or asking "who's your name?", "what are you doing?" or invites children to sing short songs even in the academic field children are taught to write, read and count and when it successfully done by children, they will be followed by rewards such as compliments.

In this research, all participants told about how to communicate and the mother's action in giving orders or punishment to children with autism must always be firm and consistent. The words used to prohibit and instruct the child should be short and clear words, such as the word "no" to give a ban, spoken explicitly and clearly. Punishment is given if the child makes a mistake, the type of punishment should have been discussed to the child before it is implemented. At the time, the researcher observed many mothers reminded the previous punishment, when the child made a mistake, so if the child made the first mistake, the mother would remind the previous agreement to prevent the child from making mistakes, for example if the child is wrong it will be confined in the room.

i. Motivations and rewards to autistic children

Parents' actions that are able to motivate children with autism can be by making contracts or agreements when they have to do something to train their discipline or train their children to fulfill their basic daily needs. Parents can give compliments and rewards of a favorite object or child's food if the child is able to do what has been agreed previously as a motivation for the child (Pamoedji, 2010). Every child expects compliments, and in a child with autism, compliments can be useful as a 'right path' guide. Give compliments through words or show affection of the parents, if the child can answer well what you ask.

Participants in this research said the methods to motivate and reward children with autism is involving affection and compliments, and rewards. All children are very happy when praised and from the researcher's observation, after which the child will be happy to do the same again. Some parents are also not used to give a gift to their child when successfully doing certain things, but for affection in the form of hugs and kisses and compliments is always given by all participants to their children.

• Autistic child’s potentials that can be developed

Dr. Purboyo Solek, Sp.A (K), also stated in the second phase of management of children with autism after the behavior is to complement basic life skills such as brushing teeth, using soap, bathing, watering, washing, wearing shoes, wearing clothes, and shoelaces, And able to difference and understand what is minimarket (indomart, alfamart), and hospital, because in his entire life may be sick, so should know there is a doctor there, there is a dentist, and there are nurses, know the market, barbershop, and other it is an expanded basic life skill. The management on the first phase trips to phase two, can be determined the level of IQ, where high functioning IQ is above 70, middle functioning between 50-70, low functioning below 50. Children with autism on low functioning are not attending school, but can be replaced to vocational schools. The first and second management is complete, then entering the two new phases where there is a determination whether of the child can be school or not and determine of where the child's potential is located. Different children with autism who
have found their own potential, it should be understood that children with autism could be smart to play music and ready to perform, but to be invited to discuss thinking and determining how the rates, discussing the preparation of any stage and negotiating with other people and the problem of other things, will still concerned as difficulties, that's the difference from the normal children.

The researcher suggest that all participants/mothers should consult a professional physician and psychologist who has experienced handling of children with autism so as to consult the child level as well as assisting in setting goals and therapeutic programs, in order to help to determine what education is suitable for the child and to show children's potential who can benefit for themselves. Mothers can gather their children with other children with autism who have the same talent to be developed and can be useful for children by making a sharing group of mothers who have children with autism, after knowing the child's talent.

Conclusion

Mothers/parents' acceptance to their children who have autism while home-caring is influenced by family support factors, family financial capacity, religious background, education level, marital status, age and support of experts and the general public. The nine participants participate in the care of their child with autism, starting from ensuring the doctor's diagnosis, fostering communication with the doctor, seeking another doctor if the doctor is considered less cooperative, telling the truth when doing consultation about the child's development, enriching the knowledge, and assisting the child during therapy. Parent Support Group has not run maximally by the nine participants, because they still rely on information from the therapy house and the doctors itself, communication between mother/parents only intertwined when they accompany or deliver their children undergoing therapy so that the information obtained is still limited.

Acknowledgements

I would like to express my sincere gratitude to Sister Imelda Ingir Ladjar, SPC, BSN, MHA as a Dean of STIKES Suaka Insan Banjarmasin who provided the primary allowance for this study. Blacius Dedi, Dr.Kep.,S.KM.,M.Kep and Oop Rope’i, M.Kep.,Ns., Sp.Kep. Kom as my Thesis advisors. dr.Purboyo Solek, Sp.A (K), dr. Kristiantini Dewi, Sp.A, Diah Puspasari, M.Psi., Psikolog and Rika Harini S.Kep., Ners, M.Kep, Sp.An the experts who helped me arranging the standard operational procedures. I also owe many thanks to the participants who were able to join my research.

References

Relationship of Physical Activity and Polymorphism Angiotensin Converting Enzyme Insertion / Deletion with Hypertension Occurrence in Coastal Communities

Sri Susanty *, I Putu Sudayasa, Julita Stella
Dept Of Nursing Faculty of Medicine Univ. of Halu Oleo, Southeast Sulawesi
*Email: srisusanty781@yahoo.com

Abstract
Hypertension is caused by various risk factors, including angiotensin converting enzyme insertion/deletion (ACE I/D) that plays a role in the pathogenesis of hypertension and physical activity that can influence the incidence of hypertension. This research aimed to determine the relationship of physical activity patterns and polymorphisms of the ACE gene I/D with the incidence of hypertension in coastal communities of Kendari City. This research is an observational analytic with experimental method, through molecular biology approach, and case control study design. The population is coastal community of Kendari city of Southeast Sulawesi Province, in the work area of Puskesmas Mata, Puskesmas Nambo and Puskesmas Abeli. The sample amount is 70 people consisting of 35 case samples and 35 control samples. Method of sampling is purposive sampling and using PCR instrument to assess Presence of ACE I/D gene polymorphism and International Physical Activity Questionnaire (IPAQ) to measure physical activity. Data analysis with Chi-Square statistic test with p value <0,050, and Hardy Weinberg to calculate allel frequency. The result of analysis indicated that there was a correlation between physical activity and hypertension occurrence, it can be seen from OR = 5,062 has significant influence, with p value 0,002 (<0,05). There was no correlation between ACE I/D gene polymorphism and hypertension occurrence with OR 0,794 had no significant effect with p value 0,631 (> 0,05). There was a significant relationship between physical activity pattern and hypertension occurrence, but there was no correlation between polymorphism of ACE I/D gene and hypertension incidence, in coastal community of Kendari City.

Key words: ACE, Hypertension, Insertion/Deletion Physical Activity, Genes, Polymorphism

Introduction
Hypertensive disease as one of the non-communicable diseases, becomes a big and serious problem, because the prevalence of hypertension disease is high and tends to increase. Many factors affect a person suffering from hypertension, including individual traits such as age, gender, ethnicity, and genetic factors, as well as environmental factors that include obesity, stress, salt intake, smoking, alcohol consumption (Anggara, 2013).

One factor that can not be controlled is the genetic factor. Essential hypertension can occur due to genetic factors, which can be found in the Renin Angiotensin Aldosteron System (RAAS). There is a gene polymorphism encoding the Renen Angiotensin Aldosteron System (RAAS) component. The genes that encode the Renin Angiotensin Aldosteron System (RAAS) component play a role in the emergence of essential hypertension because RAAS is one of the important mechanisms in the regulation of blood pressure. Angiotensin converting enzyme (ACE) is an enzyme in the RAAS system, the ACE gene plays a role in blood pressure regulation (Arifin, 2014). One of the factors that can be controlled is physical activity. People with less physical activity tend to have higher cardiac output. Based on data from the Ministry of Health in Indonesia, there are 22 provinces where the physical activity of the population is less active with
the proportion above the national average, including in Southeast Sulawesi Province which is included in the highest five which is 37.2% (Riskesdas RI, 2013)

In a study conducted by Aripin (2015) showed that mild physical activity increased the risk of 24.89 times for hypertension compared with high activity (OR: 24.89, 95% CI: 4.91 - 149.31). The tendency of increasing cases of hypertension is influenced by various factors, so it takes effort analysis of these factors. Research Jusniar Rusliafa, et al, 2014, shows the prevalence of hypertension more in coastal areas than in mountainous regions. The purpose of this research is to analyze the relation of physical activity and polymorphism of ACE I / D gene with hypertension in coastal community of Kendari City.

Method
Research design This type of observational analytic research with experimental method through molecular biology approach. Case control study design. Research sites The study was conducted in Coastal area of Kendari City, Southeast Sulawesi Province in February-July, 2017. Population and sample Sampling was done by Purposive Sampling technique. The sample of this study consisted of 35 cases and 35 controls and amounted to 70 samples. Data Collection Blood samples were taken for examination of Angiotensin Gen Polymorphism Converting Enzyme Insertion / Deletion. Physical activity was measured using an IPAQ questionnaire. Processing and analysis of data Isolation of DNA and PCR was performed at the Laboratory of the Faculty of Medicine, University of Halu Oleo. Examination of lipid fractions in clinical laboratories.

Results
Based on Table 1, it can be seen that the distribution of characteristics based on age, sex, ethnicity and occupation between case groups and control groups, it can be seen that for characteristic age of the most frequent case samples were age group 36-55 as many as 27 people (77.2%) as well as with the most control sample is 36-55 ages as many as 22 people (62.9%).

In the case sample, there were 23 people (65.7%) and for control sample there were 25 people (71.4%). The most common tribes were the Outer Southeast tribe, which were 21 people (48.6%) of the sample cases and 18 people (51.4%) control samples. While for the most characteristic type of work is the type of work of housewife as many as 18 people (51.4%) for sample of case, same with control sample that is as much as 18 people (51.4%).

| Table 1. Characteristics of Respondents by Case Group and Control Group |
|-----------------|---------|---------|---------|
| NO | Characteristic | Case | Controle |
|    |                  |   n   |    %    |   n    |     %     |
| 1. | Age              |       |         |       |         |
|    | 17-35            |   8   | 22,9    |   13   | 37,1     |
|    | 36-55            | 27    | 77,2    |   22   | 62,9     |
| 2. | Gender           |       |         |       |         |
|    | Man              | 12    | 34,3    | 10    | 28,6     |
|    | Woman            | 23    | 65,7    | 25    | 71,4     |
| 3. | Ethnic/ Etnik    |       |         |       |         |
|    | Southeast Sulawesi | 14  | 40,0    | 17    | 49,6     |
|    | Outside Southeast Sulawesi | 21 | 60,0 | 18 | 51,4 |

177
4. Work

<table>
<thead>
<tr>
<th></th>
<th>Frekuensi Genotip</th>
<th>Frekuensi Alel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>D</td>
</tr>
<tr>
<td>House Wife</td>
<td>18</td>
<td>51,4</td>
</tr>
<tr>
<td>Government employees</td>
<td>11</td>
<td>21,4</td>
</tr>
<tr>
<td>entrepreneur</td>
<td>6</td>
<td>17,1</td>
</tr>
</tbody>
</table>

The data in Table 2 shows 3 genotypes of Insertion, Insertion and Deletion, for sample cases, 20 Insertion (II) samples, 3 Deletion samples (DD) and 12 Deleted Insertion samples (ID) while for control samples are 18 samples with Insertion (II), 4 Deletion samples (DD) and 13 Delete Insertion (ID) samples.

Table 2. Frequency of Genotype and Frequency of ACE I/D Gene Allocation in Coastal Communities of Kendari City

Based on table 3 it is found that there is no Hardy-Weinberg equilibrium in the coastal population of Kendari, where for the genotype II p valuenya ≠ 1, as well as the genotype ID and DD p value of ≠ 1, so it can be concluded that the coastal population of Kendari City is evolving. The cause of evolution there are five namely Genetic drift, Gen Flow, Mutation, Marriage not random, and natural selection (Henehuli, 2008)

Table 3. Number of Frequency Observed with Expected Bandwidth in Coastal Communities of Kendari City

<table>
<thead>
<tr>
<th>Genotip</th>
<th>Observed</th>
<th>Expected</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Nilai Hardy-Weinberg)</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>38</td>
<td>36,4</td>
<td>p≠1</td>
</tr>
<tr>
<td>ID</td>
<td>25</td>
<td>28,14</td>
<td>p≠1</td>
</tr>
<tr>
<td>DD</td>
<td>7</td>
<td>5,46</td>
<td>p≠1</td>
</tr>
</tbody>
</table>
In Table 4, the lower (1.791) and upper (14.320) values are above the value of 1 (one), with OR = 5.062 it can be concluded that physical activity has a significant influence with the incidence of hypertension. Based on Table 4, it can also be seen whether there is a relationship between polymorphism of the ACE I / D gene with the incidence of hypertension. It can be concluded that polymorphism has no significant effect on the incidence of hypertension.

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Case</th>
<th>Controle</th>
<th>OR</th>
<th>P value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Physical Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At risk</td>
<td>27</td>
<td>77.1</td>
<td>14</td>
<td>40</td>
<td>5.063</td>
</tr>
<tr>
<td>Not at Risk</td>
<td>8</td>
<td>22.9</td>
<td>21</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Polimorismo Gen ACE I/D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At risk</td>
<td>15</td>
<td>42.9</td>
<td>17</td>
<td>48.6</td>
<td>0.794</td>
</tr>
<tr>
<td>Not at Risk</td>
<td>20</td>
<td>57.1</td>
<td>18</td>
<td>51.4</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

Based on result of bivariate analysis which have been done show that there is correlation between Physical Activity with hypertension event at coastal society of Kendari city, can be seen from result of analysis by using chi square test with significant level <0.05, from result of chi square test obtained p value = 0.002 << (0.05) which means H0 is rejected and H1 accepted. His research is in accordance with research conducted by Wahihudin, et al with case control method in Jeneponto regency of South Sulawesi with 164 respondents.

Research shows the result that physical activity is less a risk factor that affects the occurrence of hypertension, with OR = 2.67; 95% CI: 1.20-5.90 (Wahibuddin, et al., 2012). The results of cross sectional study in Kosovo with a large sample of 1793 obtained the result that physical activity is less related to the occurrence of hypertension with OR = 1.98; 95% CI: 1.46-2.74 (Hashani, et al., 2014). In this study for risky physical activity, both on sample and control samples were most commonly found in female sex, age range 36-55 years, in Outer Tribe of Southeast Sulawesi, and in Housewife.

Based on the data analysis, mild physical activity is one of the risk factors of hypertension and moderate physical activity is not a risk factor for hypertension. In this study, no heavy physical activity was found in coastal communities, due to the implementation of a good division of labor system. Housewives who are the most dominant jobs found in the sample (cases 51.4%, control 51.4%), in carrying out domestic work, are assisted by family members, thus easing the work. In addition the type of work is also influential, which in this study did not find a sample with a heavy type of work and is also influenced by the progress and development of technology that causes people todayadays more use of tools in completing the work. Jobs that previously demanded considerable physical capabilities are now relatively can be replaced by automatic machine tools.

Based on the result of bivariate analysis that has been done shows that there is no relationship between angiotensin converting enzyme insertion / deletion (ACE I / D) polymorphism with incidence of hypertension in coastal community of Kendari City. This study is in accordance with the meta-analysis performed by Agerholm-Larsen et al. which is limited to Caucasians. Where the results indicate that blood pressure is not affected by genotype DD compared to II. The results of this study are not in line with the study of Aziza et al. Who conducted the study in Yogyakarta where the results of the study showed a significant association between ACE I / D gene polymorphism and hypertension in Yogyakarta, Indonesia. This study also shows that the frequency of D allele of ACE gene in Yogyakarta, Indonesia is very low, based on the analysis of ACE genotype (Aziza, et al 2010). Differences in the results of research on the association of ACE I / D gene polymorphisms and hypertension due to genetic, racial and environmental diversity.
Conclusion
There is a relationship between physical activity with the incidence of hypertension in coastal communities of Kendari City. While there is no significant relationship between Polymorphism Gen Angiotensin Converting Enzyme Insertion / Delesi (ACE I / D) with the incidence of hypertension in coastal community of Kendari City.

Acknowledgment
We would like to extend our thanks to all respondents the city of Kendari, Southeast Sulawesi, Indonesia, for allowing conducting some observational survey and interview.

References
Kartikasari, AN. 2012. Hypertension Risk Factors In The Community In Kabongan Kidul Village, Rembang Regency. Semarang: Faculty of Medicine Diponegoro University
The Effects of Breastfeeding Counseling to Cultural View and Belief of Exclusive Breastfeeding in Perinatology Room RSUD Cibabat Cimahi

¹Chatarina Suryaningsih*, ²Hemi Fitriani
1,2 Program Study of Nursing Science Stikes A.Yani Cimahi
*Email: chatarina.surya@yahoo.com

Abstract
Cultural view and belief of maternal breastfeeding affect to exclusive breastfeeding program. It may discourage breastfeeding activities and provides the negative sense among breastfeeding mother. Breastfeeding counselling by nurses is an appropriate intervention to change these cultural and belief barriers since it provides the accurate information of exclusive breastfeeding benefits instead of the negative impact for breastfeeding mothers. This study aims to identify the effects of breastfeeding counselling to cultural view and belief of exclusive breastfeeding program in perinatology room at RSUD Cibabat Cimahi. This study employs quasi experimental method using one group pretest-posttest design. Whereas, 17 of breastfeeding mothers in perinatology room are participated. This study investigates further about the cultural view and belief of exclusive breastfeeding program before and after counseling (in 5 meeting). The questionnaires with 15 questions are used as research instruments and the collected data are analyzed by mean for univariate analysis and statistical t-test for bivariate analysis. The finding shows that the average of breastfeeding cultural view and belief before counseling is 6,53 and it changes into 12,88 after counseling. It means breastfeeding counseling significantly changes the negative cultural view and belief of breastfeeding mother toward exclusive breastfeeding program in Perinatology room RSUD Cibaba. The result obtained P Value (0,000) < α (0,05). Therefore, breastfeeding counseling by nurses in perinatology room can be recommended as the crucial intervention for breastfeeding mother due to reach the successful exclusive breastfeeding program.

Key words: The effects of counseling, cultural view and belief of breastfeeding, exclusive breastfeeding program.

Introduction
Exclusive breastfeeding is very beneficial for infants since it contains a complete nutrition. It was commonly given 1 hour after delivery (Siregar, 2007). Furthermore, it gives many benefits for infants include avoiding and healing infants from any diseases and gaining extra-protection from antibodies (Depkes RI, 2007). Susenas (2004-2012) in Result of National Basic Health Research (Riskesdas) has reported that Indonesian still in the lower rate of exclusive breastfeeding program. In fact, the implementation of this program on newborn infants at the age of 0 to 6 months only reaches 54,3% out of the national target as much as 80% or higher. Furthermore, this program reached to 33,7% in West Java, Indonesia (Kemenkes RI, 2014). Data of Bidang Pelayanan Kesehatan Dinas Provinsi Jawa Barat (2012) prove that Cimahi (one of city in West Java) has the lower rate or around 15.1% of the implementation of exclusive breastfeeding program.

Ludin (2008) stated that breastfeeding cultural and beliefs becomes one of the influential factor causes breastfeeding restriction since it determines mother to exclusively breastfeed their infants. Likewise, Azwar (2008) highlight, the social value whether norm, tradition or culture will indirectly determine people behavior Newman (2009) reveals that many cultural beliefs lead to a negative view toward exclusive breastfeeding. In fact, some breastfeeding mothers assume that breastfeed infants will change the shape of their breast that will affect to lower mothers’ confidence. Furthermore, exclusive breastfeeding program will restrict mother’s activities and breastfeeding mothers are less able to produce exclusive breastfeeding that resulted in children’s famines.

Edmond et al (2008) highlight, breastfeed infants with less of exclusive breastfeeding consumption have four highest risk of death than the normal breastfeed infants with enough exclusive breastfeeding consumptions. This higher risk caused by the negative breastfeeding culture and belief influences and threatens children health and safety. Therefore, the beneficial intervention must be done to reach the successful breastfeeding program. In this sense, breastfeeding counseling is an
appropriate intervention to change the negative perspective into the positive cultural view and belief of exclusive breastfeeding program (CDC, 2013).

Breastfeeding counseling provides the positive influences for breastfeeding mothers. This program gives the accurate and real knowledge of exclusive breastfeeding program and it will significantly change mothers’ negative assumption. In fact, mothers will confidently breastfeed their infants if they know the benefits of exclusive breastfeeding (Sidi et al, 2010). In reaching this successful program, nurses can take the role as counselor by sharing the accurate knowledge and information of exclusive breastfeeding benefits such as improving the confidence of breastfeeding mothers, changing their negative view of breastfeeding disadvantages, and conducting counseling practice toward the appropriate breastfeeding activity after delivery (Siregar, 2007).

Method
This research uses quasi-experimental method employing one group pretest-posttest design. Pretest is given firstly before counseling due to assessing the influence of exclusive breastfeeding cultural view and belief. Then, breastfeeding counseling is given in five meeting (two times in hospital and the rest are conducted in respondents’ houses). After all the process are conducted, the authors assess the result of breastfeeding cultural view and belief in breastfeeding mother as the posttest.

The populations in this study are post-partum in perinatology room at RSUD Cibabat Cimahi involving 17 respondents. Consecutive sampling focuses on inclusion criteria are chosen in determining the samples. Furthermore, research instruments uses questionnaires contains 15 questions of exclusive breastfeeding cultural view and belief by employing Guttman scale, where the answers are only Yes and No. Univariate analysis is conducted by mean while bivariate by statistical t-test which focuses on two different dependent mean.

Results
1. Cultural View And Belief Of Maternal Breastfeeding Toward Exclusive Breastfeeding Program

Table 1. Distribution Of Average Score On Cultural View And Belief Of Maternal Breastfeeding Toward Exclusive Breastfeeding Program Before Counseling In Perinatology Room At RSUD Cibabat Cimahi

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Deviation Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural view before</td>
<td>17</td>
<td>5</td>
<td>9</td>
<td>6.53</td>
<td>1.231</td>
</tr>
<tr>
<td>counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that 17 breastfeeding mothers have the negative cultural view and belief toward exclusive breastfeeding program before counseling. In fact, the average of their scores on breastfeeding cultural view and belief are 6.53 with deviation standard 1.231 where the lowest score is 5 and the highest score is 9.

2. Cultural View And Belief Of Maternal Breastfeeding Toward Exclusive Breastfeeding Program

Table 2. Distribution Of Average Score On Cultural View And Belief Of Maternal Breastfeeding Toward Exclusive Breastfeeding Program After Counseling In Perinatology Room At RSUD Cibabat Cimahi

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Deviation standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural view after</td>
<td>17</td>
<td>11</td>
<td>15</td>
<td>12.88</td>
<td>1.317</td>
</tr>
<tr>
<td>counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 proves that 17 breastfeeding mothers get the highest score after counseling. It means that breastfeeding counseling gives the positive influence on their cultural view and belief. The scores are increased to 12.88 with deviation standard 1.317. The lowest score is 11 and the highest score is 15.

3. The Effect Of Breastfeeding Counseling To Cultural View And Belief Of Exclusive Breastfeeding Program.

Table 3. Distribution Of Average Score On Cultural View And Belief Of Maternal Breastfeeding Toward Exclusive Breastfeeding Program Before And After Counseling In Perinatology Room RSUD Cibabat Cimahi

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>Different Mean</th>
<th>Deviation Standard</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural view before counseling</td>
<td>17</td>
<td>6.53</td>
<td>6.25</td>
<td>1.579</td>
<td>0.000</td>
</tr>
<tr>
<td>Cultural view after counseling</td>
<td>12.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. proves that the scores of breastfeeding cultural view and belief in breastfeeding mother before and after counseling is 6.25 with deviation standard is 1.579. Statistical t-test obtained p value : 0.000 and alpha 5%. In this sense, there are the differences of average scores on maternal breastfeeding cultural view and belief toward exclusive breastfeeding program before and after breastfeeding counseling. Therefore, breastfeeding counseling affects to maternal breastfeeding cultural view and belief and it gives the positives influences on exclusive breastfeeding program in Perinatology room at RSUD Cibabat Cimahi 2017.

Discussion

1. Cultural view and belief of exclusive breastfeeding program before counseling

The finding shows that the average score of cultural view and belief of exclusive breastfeeding program before counseling is 6.53 with deviation standard 1.231 where the lowest score is 5 and the highest score is 9. In this process, breastfeeding mothers still have the negative assumptions to breastfeed their infants.

Sidi, et al (2010) stated that culture and belief in socio-environment are two major factors contributing to children health. For example, these two major concerns related to mother’s assumption in determining to breastfeed their children. Exclusive breastfeeding should be given to their infants where they are in 0 month until 2 years. However, many cultural views determine that exclusive breastfeeding are given when the infants are less than 2 years or 6 months.

Socio-environment takes the major concern on maternal breastfeeding awareness since it indirectly determines mother’s decision to breastfeed their infants or not. For example, the experience of breastfeeding, the knowledge of breastfeeding benefits and the attitude of paramedical in helping breastfeeding mother. (Sidi, et al, 2010).

The majority of respondents participated in this study comes from Sundanese where they still have the highest and strongest culture and belief. It shows in the questionnaire related to cultural view and belief of exclusive breastfeeding program. Many of respondents convince that the first exclusive breastfeeding is yellow color and it cannot be given to their newborn infants. Likewise, they assume that the first exclusive breastfeeding produced in the morning is stale and not well-consumed for their infants. Some of them are agree if their newborn infants eat another food beside exclusive breastfeeding. Maternal breastfeeding experiences does not affect to culture and belief of exclusive breastfeeding program. Therefore, almost of breastfeeding respondents still have the highest negative assumption toward exclusive breastfeeding program.
Moreover, the negative cultural view and belief toward exclusive breastfeeding program caused by the tradition of their descendants related to obscure cultural knowledge and belief without the accurate, reasonable and scientific proofs (Lowdermilk, Perry & Cashion, 2013).

2. **Cultural view and belief of exclusive breastfeeding after counseling**

   The average score of cultural view and belief of exclusive breastfeeding after counseling proves the highest different scoring (12.88) before counseling. The deviation standard is 1.317 where the lowest score is 11 and the highest score is 15.

   In this sense, breastfeeding counseling can be given to breastfeeding mother. This program is conducted in five meeting by following the step as follows: breastfeeding mothers attend this meeting in Perinatology room RSUD Cibabat Cimahi. The authors provide *bina trust* and give informed consent while the respondents breastfeed their infants. When they are agree to participate in this research, the authors ask them to fill the pretest questionnaire completely related to cultural view and belief of exclusive breastfeeding. However, some of them feel confused while filling up the questionnaires since it contains the scientific words such as colostrum, etc. Ludin (2008) highlight, paramedical take the great role to share and give the information and convince breastfeeding mothers.

   Cultural view and belief of exclusive breastfeeding program is variously improved. In fact, a half of this program contributes the most to the positive perspective of breastfeeding mother while several respondents still confidently follow the existed culture and belief. The findings shows that this condition are caused by several factors such as the tradition, socio-environment, types of job and both individual awareness and decision to follow the tradition or not (Yani, 2012). Counseling is an interactive way between two or more people due to help and solve the problem. It proposes to gain the cognitive change and modification, or to change the irrational into rational belief (McLeod, 2006).

3. **The effects of breastfeeding counseling to cultural view and belief of exclusive breastfeeding**

   The findings in the Table 3 proves that the average score of cultural view and belief toward exclusive breastfeeding mother before and after counseling is 6.25 with deviation standard 1.579. Statistical t-test obtained p value : 0.000 with alpha 5%. In conclusion, there are the differences of average score on maternal breastfeeding cultural view and belief toward exclusive breastfeeding program before and after breastfeeding counseling. Therefore, breastfeeding counseling affects to maternal breastfeeding cultural view and belief and gives the positives influences on exclusive breastfeeding program in Perinatology room RSUD Cibabat Cimahi 2017.

   Breastfeeding counseling is proved to create togetherness and equal perception since it significantly avoids people from dissimilar assumptions. In this sense, the role of counseling aims to provide alternative and consultative information and recommendation (*BPKB* East Java). Therefore, breastfeeding counseling should be given to provide the accurate information about the benefit of exclusive breastfeeding and the positive cultural view and belief of this program.

   Cahya, et al (2008) stated that, maternal post-partum after delivery experiences the transitions where they feel the different condition before and after delivery and have newborn infants, they usually get lack of knowledge about caring infants and giving exclusive breastfeeding appropriately. Breastfeeding mothers should need much information, whether it is from paramedical or other health professional care to enhance their understanding. Likewise, paramedical in hospital should share and give any knowledge related to delivery and exclusive breastfeeding program by demonstration, leaflet, poster, or exclusive breastfeeding counseling.

   Notoatmodjo (2010) highlight, an appropriate exclusive breastfeeding counseling will optimally increase mothers’ understanding since they will get the information as long as they learned. As exclusive breastfeeding information is given, maternal breastfeeding awareness will arise. Therefore, breastfeeding mothers will give the positive behavior based on their knowledge or information. The findings prove that breastfeeding counseling is optimally
effective to change the negative cultural view and belief of exclusive breastfeeding. It means that, breastfeeding counseling should be conducted to increase maternal breastfeeding confidence after delivery. This program is expected to obtain the positive cultural value, increase children health and solve the common problem on breastfeeding activities.

**Conclusion**

The average score of cultural view and belief toward exclusive breastfeeding before counseling is 6.53 (respondents still have the negative cultural view and belief).

1. The average score of cultural view and belief toward exclusive breastfeeding after counseling is 12.88 (counseling changes the negative into the positive assumption).
2. Breastfeeding counseling changes cultural view and belief of exclusive breastfeeding in Perinatology room RSUD Cibabat Cimahi 2017 with P value (0.000) < α (0.05).

**Acknowledgment**

This research and some funding were supported by Stikes Jenderal A. Yani Cimahi, LPPM and Kemenristek Dikti.

**References**


CDC. (2013) *The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies Centers for Disease Control and Prevention*. Atlanta: National Center for Chronic Disease Prevention and Health Promotion


Dominant Factors Affecting the Implementation of the Integrated Managing Toddler Sick (MTBS) in Public Health Center Tasikmalaya West Java

1 Asep Setiawan*, 2 Budiman, 3 Chatarina
1 Program Master of Nursing Stikes A. Yani Cimahi
2 Program Study Public Health Stikes A. Yani Cimahi
3 Program Study of Nursing Science Stikes A.Yani Cimahi
*Email: asep.setiawan7105@gmail.com

Abstract
According to the WHO and UNICEF, there are several indicators of implementation of MTBS, among other indicators, management support officer skills, and level of satisfaction indicators against the introduction of service provided. The purpose of this research aims to know the dominant factor affecting the implementation of the MTBS in Public Health Center Tasikmalaya. This research is a type of analytic survey research with cross sectional design research. The sample in this research is all officer health MTBS that totaled 106. The instrument used in this research is the observation sheet and questionnaire. Analysis of the data used is a simple Linear Regression for bivariat and multivariate Factor Analysis. The results of the research there are three factors i.e. Factor 1 (leadership and ability of health workers) consists of the knowledge, leadership support, supervise, completion of form completion. Factor 2 (Internal health workers and supporters) is composed of demeanor, motivation, the completeness of the drug. Factor 3 (infrastructure) consists of the presence of poly and the completeness of the instrument. Dominant factors affecting implementation of the MTBS supervise, namely the attitude of health workers, the completeness of the tools for the implementation of the MTBS. Based on the results of the research recommended that to the increases of MTBS in the public health center need to be more in enhance supervised by health services and public health manager, improved attitude from implementing MTBS and planning to complement the equipment.

Key words : Attitude, dominant factors, MTBS, supervision, the completeness of instruments

Introduction
Millennium Development Goals (MDGs) was established to improve child and maternal health significantly. It shows in target 4 which aimed to decline neonatal mortality rate and target 5 focused on reducing child mortality rate. However, Sustainable Development Program (SDGs) has been launched to change this program in 2015 with ensure to reach the targets set out by 2030 directly related to health. Target 3 out of 17 in this program is proposed to support healthy life and promoted wellbeing for all at all ages, SDGs were successful to improve child and maternal health, whereas target 3 is set to decrease child mortality. This target is significantly proposed to end the preventable neonatal mortality rate at least as low at 12 deaths per 1.000 live births and to reduce child mortality rate at least as low as 25 deaths per 1.000 live births (Kemenkes RI, 2015). Almost of 5,9 million children under 5 years of age died in 2015 but this condition shows the different rate which decreased by 12 million. In this sense, all global of neonatal deaths are commonly caused by preterm birth complications, pneumonia, birth asphyxia, diarrhea and malaria while about 45% of all child deaths are linked to malnutrition (WHO, 2016). Moreover, a half of this major condition causing child mortality actually can be prevented by getting the easier access or the basic medical services with affordable intervention.

World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) developed a strategy called as Integrated Management of Childhood Illness (IMCI) to reduce the rate of child mortality, illness and disability. This strategy has been explored in Indonesia since 1996 and its implementation began to 1997. A preliminary study conducted by the author are interview and observation the healthcare professionals including CEO, nurses and midwife in 4 of Tasikmalaya Municipal Health Center where
IMCI has been implemented. The condition shows that 1 of Municipal Health Center have no healthcare professional who already get IMCI training though the special room of examination with management of IMCI is already provided. Otherwise, 1 of Municipal Health Center have one healthcare professional who has attended IMCI training but it does not have IMCI examination room, thus the service of this program still merged with KIA/KB. In addition, 2 of Municipal Health center already have IMCI examination room but the implementation of this program in one out of 2 Municipal Health Center is directly conducted by doctors. Furthermore, 2 of Municipal Health centers provides the IMCI tools completely while the rest have not provided these completed tools yet. The result shows that IMCI program is successfully supported by all of CEO in Tasikmalaya Municipal Health Center. Likewise, the supervision of the health department to Tasikmalaya Municipal Health center has been done although the implementation is conducted in different time and the general supervision is not specifically controlled to the evaluation of the implementation of IMCI.

Method
This study employed cross sectional design and 106 of nurses, midwife and doctors in Tasikmalaya Municipal Health Center participated in this study. The sampling technique used in this study is total sampling involving all population as well as 106 medical social workers.

Results
a. Distribution of Factors Contributing to The Implementation of IMCI at Tasikmalaya Municipal Public Health Center.

<table>
<thead>
<tr>
<th>No</th>
<th>Factors</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.Good</td>
<td>26</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td>2.Fair</td>
<td>77</td>
<td>72.6</td>
</tr>
<tr>
<td></td>
<td>3.Lack</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>2.</td>
<td>Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.Positive</td>
<td>47</td>
<td>44.3</td>
</tr>
<tr>
<td></td>
<td>2.Negative</td>
<td>59</td>
<td>55.7</td>
</tr>
<tr>
<td>3.</td>
<td>Motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a.High</td>
<td>45</td>
<td>42.5</td>
</tr>
<tr>
<td></td>
<td>b.Low</td>
<td>61</td>
<td>57.5</td>
</tr>
<tr>
<td>4.</td>
<td>IMCI room</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a.Available</td>
<td>14</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>b.Unavailable</td>
<td>7</td>
<td>33.3</td>
</tr>
<tr>
<td>5.</td>
<td>IMCI tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a.Completed</td>
<td>15</td>
<td>71.4</td>
</tr>
<tr>
<td></td>
<td>b.Partially Completed</td>
<td>6</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>c.Incompleted</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.Completed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4.Partially Completed</td>
<td>21</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>5.Incompleted</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7.</td>
<td>CEO’s Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b.Supported</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>c.Lack- Supported</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>8.</td>
<td>Supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a.Appropriate</td>
<td>54</td>
<td>50.9</td>
</tr>
<tr>
<td></td>
<td>b.Inappropriate</td>
<td>52</td>
<td>49.1</td>
</tr>
<tr>
<td>9.</td>
<td>Form Filling</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.Appropriate</td>
<td>47</td>
<td>44.3</td>
</tr>
<tr>
<td></td>
<td>2.Inappropriate</td>
<td>59</td>
<td>55.7</td>
</tr>
</tbody>
</table>
b. The Development of Factors Contributing to The Implementation of IMCI in Tasikmalaya Municipal Health Center.

Table 2 The Development of Factors Contributing to The Implementation of IMCI in Tasikmalaya Municipal Health Center.

<table>
<thead>
<tr>
<th>The Development of Factors</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Factor : Leadership &amp; The Ability of Healthcare Professionals</td>
<td></td>
</tr>
<tr>
<td>1. Knowledge</td>
<td>-0.456</td>
</tr>
<tr>
<td>2. CEO’s Support</td>
<td>0.876</td>
</tr>
<tr>
<td>3. Supervision</td>
<td>0.879</td>
</tr>
<tr>
<td>4. Form Filling</td>
<td>0.606</td>
</tr>
<tr>
<td>2nd Factors : Internal Healthcare Professional &amp; other supported factors</td>
<td></td>
</tr>
<tr>
<td>5. Attitude</td>
<td>0.823</td>
</tr>
<tr>
<td>6. Motivation</td>
<td>0.589</td>
</tr>
<tr>
<td>7. Medicine</td>
<td>0.481</td>
</tr>
<tr>
<td>3rd Factors : Facilities and Infrastructure</td>
<td></td>
</tr>
<tr>
<td>8. IMCI room</td>
<td>0.469</td>
</tr>
<tr>
<td>9. IMCI tools</td>
<td>0.835</td>
</tr>
</tbody>
</table>

c. The scheme of The Finding Dominant Factors Affected to The Implementation of IMCI in Tasikmalaya Municipal Health Center.

Fig 1 The Finding of Dominant Factors Affected to The Implementation of IMCI ABC Model (Asep, Budiman, Chatarina) in All of Tasikmalaya Municipal Health Center

Discussion
Factor 1 (leadership and ability of health workers) consists of the knowledge, leadership support, supervise, completeness of form completion. This means health workers carry out the MTBS in the public health center because it has knowledge of the MTBS, support the leadership of the health centers, like he did supervise by health services and by the leadership of public health center as well as trying to complete form completion MTBS.

The dominant factor of the first factor is supervision (0.879). The research results showed that supervision implementation MTBS that say according as much as 54 people (50.9%) meaning for this supervision implemented by the health service or leadership public health center already regarded as expected. This corresponds to a factor analysis show that variable has a positive correlation supervise, meaning the more appropriate supervise was done by health service and head of the public health center then the implementing officers by MTBS will continue implemented. To ensure
implementation MTBS in the public health center head doctor and public health should always monitor periodically the implementation of the application of the MTBS in the public health center and the networks (DEPKES RI, 2015). The real conditions that occur in the field showed that the weaknesses of the implementation of any program in public health centers, namely weak oversight by the way supervise this rarely performed by the related parties. Monitoring and supervision of the application of the MTBS in the public health center of which with the facilitative supervise is part of monitoring and supervision that is direct, systematic activities to ensure implementation of the MTBS into details in, does the giver the Ministry undertakes the MTBS standard, how the application of MTBS in the public health center. Implementers of this facilitative supervise is the head and doctors clinics, assisted by midwife coordinator against health workers involved in the service of MTBS in the public health center and its network. In charge of the program related MTBS health City/County agency and profession (IDL, IBI, PPNI). The time of its implementation could be routinely i.e implemented 2 times a year or when it means to supervise postgraduate training and orientation (4-6 Sunday). The head of the clinic doctor should do da supervise facilitative as often as possible to keep the quality of children's health services at the public health center. Activities supervise facilitative could also be combined with other programs or supervise the distribution of logistic activities (DEPKES RI, 2015). Supervision, evaluation, guidance can be a supervision of the health services, feedback in written form, and monitoring and evaluation meetings run by the Health Office. Nationwide public health center receive supervision, evaluation, supervision and guidance for mothers and children is 51.5% received visits and 48% do not receive visits (Rifaskes, 2011).

According to WHO’S successful implementation of MTBS will be hampered if not supported by the policies and leadership support from the Centre as well as the routine oversight/appropriate. Steinhardt research CL et al. (2015) the importance of the supervision of health care personnel will further improve performance in handling a sick toddler who came to seek cures using closer MTBS. Rowe et al. (2012) the trend of the performance of health workers after applying MTBS results found no evidence that declining performance for 3 years after training MTBS. However, the supervision of the performance of the more important are identified after the training so that the MTBS could survive. Venkatachalam J, et al. (2012) supervision and monitoring is essential for the implementation of a program.

Hilary Rhode (2014) the impact of training on the use of the nurses ability against the guidelines of MTBS were significantly better in the usage guidelines of MTBS (p < 0.05): check the immunization (68% vs. 93%), making a complete assessment (100% vs. 62%), prescription medications (50% vs. 85%) and the proper dose (42% vs. 85%). Goga Ameena E research and Lulu M Mühe (2011) the challenge of implementation result MTBS of the most common challenges is the high cost and a long time in implementation, the lack of trained health workers, there are still differences of opinion about the role of MTBS in improving the health of children, the lack of support of wisdom, the existence of the rule change and the lack of skilled/trained facilitators. Countries in overcoming these challenges include, intensify training, develop planning conveniently located with other programs, increased advocacy. The most common challenge for follow-up implementation of MTBS including lack of funds (93.1% of respondents), inadequate funding for the planning or supervise (75.9% and 44.8% respectively), the lack of funds for patient visits (41.4%), less its skilled from supervisors (41.4%) and job aids are inadequate (27.6%). Countries in following up this challenge by using shared the regular supervision visits.

Research Nguyen D et al, (2013) training can improve the skills of health workers implementing MTBS with overall results that health workers trained MTBS implementers can make classification of diseases of the sick children properly (RR = 1.93, 95% CI: 1.66-2.24).

Factor 2 (Internal health workers and supporters) is composed of demeanor, motivation, the completeness of the drug. The officer executing MTBS want execute MTBS in the public health center because it has a positive attitude, have a high motivation as well as supported by the completeness of the medicines. Dominant factor 2 is the attitude (0.823). Results of the study showed health workers implementing MTBS mostly have negative attitudes as much as 59 people (55.7%). The results of the analysis of factors showed positive attitudes have variable correlation, the more positive attitude of the officer executing MTBS then will be more actively to implement the MTBS. Attitude is the evaluative statements against an object, person, or event (in 2007 Stepan Arwana and dear friend, 2013). Evaluation or assessment by health workers towards the MTBS will positively impact will the increasing responsibilities of the officer and is ready to bear the risk if it does not implement the MTBS standard. These conditions will have an impact on the success of the
implementation of the MTBS in the public health center because with more responsible officer against his duties as executor MTBS will be increasingly goes with the good execution of the MTBS in the public health center.

The research of Ahmed HM, et al. (2010) about compliance implementation MTBS, revealed that most of the officer executing this feel MTBS algorithms take time, and prefer to use another protocol despite having had the basic competence and confidence in the algorithm. Low compliance is also observed in some other countries. One study evaluated compliance with the guidelines of the MTBS in South Africa, and found that after 32 months of training, less than 2% of the health workers refer to the guidelines in carrying out governance MTBS toddler hurt. Also, only 12% of officers trained MTBS were found to check for signs of danger in every child, and only 18% of the votes of all the main symptoms in each child. Similar findings were reported in Bangladesh, where children often are not fully assessed or properly cared for at facilities with trained officers by MTBS.

Research results Swapna D Kakoty and Priyanka Das (2016) found a lack of compliance in the use of the guidelines of MTBS to manage toddler sick by implementing officer. One of the reasons is the lack of supervision.

Research results a. Rowe et al. (2009) the importance of supervision of the leadership in the implementation of MTBS in this regard would enhance coordination, implementation, management officer skills, motivation and attitude of the officers. Lange S et al. (2013) lack of knowledge is not the only one that could affect the implementation of the MTBS but motivation and physical condition of the officers is still lacking to be able to comply with the guidelines of the MTBS it is derived is caused by lack of intrinsic motivation. The research of Azza a. El Mahalli, Ola a. Akl (2011) the influence of the use of the MTBS toward administering the treatment in children, the result of the correct choice of drug, dose, dosage form, the way the grant is significantly higher in the public health center adopting MTBS (89.3%, 87.3%, 91.3% and 91.3%, respectively) than in the public health center did not adopt MTBS (78%) respectively.

Factor 3 (infrastructure) consists of the presence of poly and the completeness of the tools. Health care personnel who served as implementing MTBS will continue to carry out its duties if supported by the completeness of the tools and political existence or special examination room MTBS that are in the public health center.

Dominant factor of a factor of two is the completeness of the tools (0.835). Research results showed the completeness of the tool indicate the majority of categorized complete i.e. There are 15 health centers (71.4%). This means that most public health center completeness of both consumables and health equipment is in compliance is expected to support the implementation of the MTBS. Factor analysis results showed a positive correlation has tools, meaning that the more complete tool then the clerk will administer MTBS handlers sick toddlers in clinics with the approach of the MTBS.

According to WHO the present health system weak Center will affect the implementation of the MTBS in one country, much less if it's not supported do not have good facilities, availability of equipment is lacking, the completeness of the medicines is not complete, reference system is lacking, a lack of regular supervision/supervise and lack of performance managing officer MTBS.

The research of Mugala N, et al (2010) barriers to health workers in the use of the guidelines for HIV in algorma MTBS result 83% of respondents said they had no difficulty in following HIV adapted guidelines MTBS. 17% say they have had trouble. Of those who claim to have difficulty (60%) had difficulty in assessment of HIV.

FGD results indicate difficulties in assessment of HIV is due to a long assessment time, lack of special places for examination and the presence of a negative stigma both from caregivers or health workers. The Ministry of public health-based MTBS are very good if the implementation was done by MTBS officer with the quality of education and knowledge of human resources as well as supported by the facilities and infrastructure in puskemas (Hidayati and Jimbo, 2011).

The research is in line with the research that has been done by Husni, dkk (2012) who is researching about the description of the implementation of the MTBS 2 months – 5 years, obtained the results of research that is highly successful implementation of MTBS on the influence by the the availability of human resources and the availability of infrastructure in the public health center.

Edwar research et al. (2012) stated that the increased implementation of the MTBS can be influenced by the availability of trained health personnel, knowledge of the officers, the availability of clinic/poly and special supervision. Kalu N et al. (2016) identified the use of the tool when the examination of children with pneumonia in which the tool – a tool that should be available including a stethoscope, respiratory, timer thermometer, Oximeter. Mohan P et al. (2011) the assessment of the application of
the MTBS in India showed that a lack of supervision and equipment completeness MTBS will affect the performance of the trained officers in the discharge of MTBS. Evaluation of dibanyak State also found a lack of dukung health system towards the implementation of the MTBS. The research of Ahmed HM, et al. (2010) the comprehensiveness and completeness of drug tools will further increase its use with the use of the guidelines for MTBS. One study in China found that the use of the scales of children increased from 28% to 91%, 89% of the time device being 97%. This shows that the completeness of the tools should be available in the implementation of the MTBS.

**Conclusion**

Implementation of the MTBS in the whole area of Public Health Center Tasikmalaya is influenced by three factors that were formed namely leadership and ability of health officers, the internal health workers and supporters, as well as external infrastructure.

**References**


Rhode Hilary (2014) The effect of an automated integrated management of childhood illness guideline on the training of professional nurses in the Western Cape, South Africa, Stellenbosch University, Tygerberg, South Africa.

Rowe K et al. (2009) The rise and fall of supervision in a project designed to strengthen supervision of Integrated Management of Childhood Illness in Benin, The London School of Hygiene and Tropical Medicine.


The Influence of Lotto’s Color on Cognitive Development
Preschool Age Children (4-5 years old) in Purnama Karang
Mekar Kindergarten Cimahi Tengah

1Fauziah Rudhiati *, 2Rina Triana, 3Ibrahim Noch Bolla
1,2,3 Stikes Jenderal Achmad Yani Cimahi
E-mail: frudhiati@gmail.com

Abstract
Cognitive development is essential for stimulating as it can affect the learning process of the child in the future. For it is necessary the appropriate stimulation. Lotto's color is a visual media that is able to assist in improving aspects of cognitive development in recognize colors and shapes. The purpose of this research is to know the influence of color on the development of cognitive lotto. The type of design study using the quasy experiment one group pre-test post-test design. Sample selection technique using total sampling with a total of 24 students, with time data retrieval for 6 days. Assessment of cognitive development is carried out using a questionnaire. This research uses developmental cognitive assessment instrument consists of 22 development of cognitive tasks. Assessment of cognitive development using univariate analysis to get the average value before the given stimulation lotto results from 12.96. Bivariate analysis to get average results after interventions Lotto’s Color with 16.54 results. Data processing using the T-test statistic test results with the dependent score of cognitive development after given lotto results obtained color p. value 0.001 < α (0.05). Recommended Lotto’s Color can be used to enhance cognitive learning media on children.

Key words: cognitive development, lotto's color, pre school age

Introduction
Cognitive development is one aspect of human development related to understanding, namely all psychological processes related to how individuals learn and think about their environment (Desmita, 2013). Cognitive ability can make children be able to explore the surrounding circumstances through the senses so that with a knowledge that has been received will help the child to carry out his life and become a whole human being in the future (Susanto, 2011).

Learning media that can help children in improving aspects of cognitive development one of them is the media development of geometry and visual development. According to (Budiarto, 2000) the purpose of geometry learning is to develop logical thinking ability, develop spatial intuition, instill knowledge to support other materials and can read and interpret mathematical arguments. One of the learning media geometry for pre-school age children is the game of Lotto’s Color.

In addition to the development of geometry, lotto’s color is a visual media that is able to assist in improving aspects of cognitive development in getting to know the color and shape. In addition to color recognition, lotto’s color media is very important in the learning process because the child is in concrete thinking (Suryaningrum, 2012). (Laris, 2014) states with the use of media lotto cognitive development of pre-school age children can increase. Previously the cognitive development of these children was in the range of 67.18% after intervention using Lotto’s Color increased 19.75% to 86.93%.

Based on the preliminary study conducted by interview and observation method about cognitive development at Principal and teacher in TK Purnama Karang Mekar Cimahi, it is found that there are still many students who have to get special guidance when the learning process. Of the 51 students, there are only 10 students who quickly and accurately answer the teacher's questions about the various colors and shapes, some have difficulty answering and still need the help and direction of the teacher. In addition, children also can not group the various colors and match the forms of geometry. Based on these data the researcher was interested to see the effect of Lotto’s Color game on cognitive development of students in TK Purnama Karang Mekar Cimahi.
Method

The design used in this study is one group pre-test and post-test. In this design, there is no comparison (control) group but has done the first observation (pre-test) that allows testing the changes that occurred after the experiment (Notoatmodjo, 2012). The shape of the design are as follows:

Pretest                         干预                          Posttest

![Fig 1. Design study quasy experimental one group pre test and post test design](image)

Description :

a. : cognitive development before intervention
b. X : Intervention of lotto’s color is given as 6 times in 6 times
c. : Cognitive development after the given the intervention of lotto’s color

The population in this study were all students of class A (age 4-5 years) in TK Purnama Karang Mekar Cimahi Tengah which amounted to 24 students. Sampling technique in this study using total sampling technique, the technique of determining the sample by taking all members of the population as respondents or samples (Sugiyono, 2012). So the sample of this research amounted to 24 students.

Data collection in this study was conducted for 1 week starting from respondent selection to post-test appraisal. A pre-test was conducted to determine the cognitive development of all respondents before being given intervention. At the intervention stage, the researchers provide intervention or treatment in the form of an educative game that is lotto color with duration of approximately 10 minutes in one time per day. Intervention as much as 6 times for 1 week starting from May 19 until May 27, 2017. The implementation of color lotto game done in class A and performed simultaneously.

The research instrument used in this study is a questionnaire developed by researchers based on cognitive ability guidance of children aged 4-5 years in according to Sujiono, 2011). In the research instrument used in this research, there are 22 items of geometry and visual development question that is choosing objects according to their color, shape and size, matching objects according to their color, shape and size, comparing objects according to their size big, small, long, wide, high, low . Understand and use a language of size such as large, high-low, long-short, calling objects that exist on the class according to the shape of geometry, imitating the forms of geometry, calling, showing and classifying rectangles. The data onto this study are normally distributed so that the data is processed using a different test. The two dependent means are used to test the mean difference between two dependent data groups (the same subject is measured twice) (Riyanto, 2011).

Results

The results will be presented in the following tables:

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min-Max</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test</td>
<td>12.96</td>
<td>2.404</td>
<td>9-18</td>
<td>11.94-13.97</td>
</tr>
</tbody>
</table>

Table 1 above shows the results that obtained the average score of child cognitive development before the lotto color intervention is 12.96 with standard deviation 2.404. The table above shows that the lowest cognitive development scoop is 9 and the highest cognitive development score is 18 with the confidence interval (CI) value is 11.94-13.97.
Table 2 Overview of Cognitive Development Score After the Lotto Color Intervention in TK Purnama Karang Mekar Cimahi Tengah 2017

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min-Max</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Post Test</em></td>
<td>16.54</td>
<td>1.532</td>
<td>14-20</td>
<td>15.89-17.19</td>
</tr>
</tbody>
</table>

Table 2 above shows the results that obtained the average score of cognitive development score of children after given the lotto color intervention is 16.54 with standard deviation 1.532. The table above shows that the lowest cognitive development score is 14 and the highest cognitive development score is 20 with the confidence interval (CI) value is 15.89-17.19.

Table 3 Differences of Cognitive Development Scores Before and After Lotto Color Intervention in TK Purnama Karang Mekar Cimahi Tengah Year 2017

<table>
<thead>
<tr>
<th>Penilaian</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Min-Max</th>
<th>P_value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Pre Test</em></td>
<td>12.96</td>
<td>2.404</td>
<td>0.491</td>
<td>9-18</td>
<td></td>
</tr>
<tr>
<td><em>Post Test</em></td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>14-20</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>.</td>
<td>.</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

The change of respondent score in this research varies. Scores obtained by 3 respondents experienced an increase of 2 points, 7 respondents experienced an increase of 3 points, 5 respondents experienced an increase of 4 points, 4 respondents experienced an increase of 5 points, 4 respondents experienced an increase of 6 points. There are also respondents who did not change the score before and after the intervention but the score is high enough that is 18 points from 22 points.

The results showed an increase in the score of cognitive development after given the lotto intervention of color and shape, this is in accordance with what has been conveyed by (Sujiono, 2011) which states that the lotto of color and shape can stimulate the development of cognitive nerves of children, able to develop the ability of children in solving a problem, can establish cooperation and socialize with friends of his group, able to develop the education of members of the body either hands, fingers or eyes, able to develop the ability of children in distinguishing colors and that is in the media lotto (train intellectual).

Lotto color is a game for children aged 4 years and over made from plywood or duplex consisting of lotto board measuring 17.5 cm x 17.5 cm and 9 lotto cards consisting of 9 kinds of colors. The media has an important role in the learning process, especially in the learning activities for pre-school age children. The word media is derived from the Latin and is the plural of the word "Medium" which literally means "intermediary" ie the intermediary of the message source with the message recipient (Eliyawati, 2014).

Physical knowledge is constructed by the child using the association between the object and the treatment given to the object, so it takes the interaction of the child with the object so that the physical knowledge can be received by the child well. Children learn things from simple to more complex concepts. This supports the opinion of (Sujiono, 2011) that the first developed physical knowledge for children is the introduction of color, graded, ranging from primary colors (red, yellow and blue), secondary colors (green, purple and orange), tertiary colors white and black.)
The introduction of the concept of color is very important since the child is still in pre-school age stage because the various colors found children and children will learn according to different stages of development and difficulty. The definition of color can be divided into two namely subjectively (psychologically) and objectively (physically). It is subjectively interpreted as part of the sense experience of vision. While the objective color is defined as the result of the wavelength of light emitted (Soewignjo, 2013).

Stimulation of physical objects received by the child is expected to improve the development of children's knowledge about the concept of color that is included in the cognitive aspect. Cognitive development is the development of the mind, the mind is the part of the brain used for understanding, reasoning, knowledge, and understanding. Cognitive is often synonymous with the intellectual because, the process is much related to the various concepts that have been owned by the child and with regard to his ability to think in solving a problem. This is important because in the process of life, the child will face various problems to be solved. Solving problems from the simplest is a more complex step in the child, who previously needs to have the ability to find a way of solving it (Sujiono, 2011).

Based on Table 3 it is known that the average value of cognitive development score before the color lotto intervention of 12.96 with a standard deviation of 2.404, standard error 0.491, the lowest value 9 and the highest score 18. Meanwhile, the average score of cognitive development score after given lotto is 16.54 with a standard deviation of 1.532, standard error 0.313, the lowest value of 14 and the highest value of 20. Statistical test results using T-test dependent obtained P.value of 0.001. This means P.value <alpha (0,05), it can be concluded that there is a difference between cognitive development score before and after given lotto color intervention.

Conclusion

The conclusion that can be drawn from the results of this study is that in the process of development of pre-school age children should parents can provide stimulation appropriate to the child's development, whether on the aspects of motor development, cognitive, language, social-emotional. Stimulation plays an important role in the development process because it has a function to stimulate and explore the skills, abilities, and potential that exist in a child. The period of cognitive development accompanied by appropriate stimulation and age-appropriate children can improve and optimize the rate of development of the child. The rate of cognitive development of children can be increased by various stimulation and one of them is by giving stimulation media.

References


The Correlation of Stress Level with Hypertension Prevalence on Hypertension Clients at Leuwigajah South Cimahi Community Health Center in 2014

Tria Firza Kumala*, Kiki Buqori
1,2 Nursing Department Stikes Jenderal Achmad Yani Cimahi
*Email: tiafirza@yahoo.com

Abstract
The research background is hypertension prevalence is a degenerative disease which prevalence rate is high enough in all over the world and in Indonesia especially. Hypertension is a condition with blood pressure experiences above the normal that causes morbidity and mortality rates. The 140/90 mmHg blood pressure based on 2 phase in every pulse rate is systolic phase 140 stated blood pulse which pumped by heart and 90 diastolic phase stated that blood return to the heart. From the assessment was obtained at Leuwigajah South Cimahi Community Health Center that hypertension prevalence has increased in 2011 - 2013. The research aims to identify the correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah Community Health Center. The research method used descriptive with correlational design and cross sectional study approach. The research samples were as many as 90 respondents with samples collecting used accidental sampling technique. Data were obtained by using univariate analysis with percentage and bivariate by using chi-square statistic test with the p value 0.05. Based on research result analysis was obtained that there is correlation between stress level with hypertension prevalence with p value $p < 0.05$. The research results are hoped that for Community Health Center is able to focus on hypertension risk factor especially stress level and more give attention to communities about the hypertension risk factors through the preventive and promotive efforts without ignore the curative and rehabilitation to communities at area work of leuwigajah South Cimahi Community Health Center.

Key words: Cross Sectional, hypertension, stress level

Introduction
Hypertension is usually called as “silent killer”, it is caused the hypertension sufferers in years without any disorder or symptom. Unconsciously, the sufferers have complication on vital organs such as heart, brain, and kidney. Hypertension symptoms are such as headache, it almost occurs as hypertension in medium phase when blood pressure has been in the significant rate. (Triyanto, 2014)

The amounts of Hypertension sufferers recently are almost many in developing countries. Global Status Report on No communicable Diseases 2010 Data of WHO stated that 40% developing countries have hypertension sufferers; meanwhile the modern countries have only 35% sufferers. (Indonesia Health Dept, 2012) Hypertension prevalence in Indonesia is in still high, besides that, the effect of it is able to make problems of community health. Hypertension is one of risk factors influence toward coronary and blood vessel diseases. (Health Dept, 2012)

Based on the health research stated that most of hypertension cases in communities have not been diagnosed. It is known from blood pressure assessments on sufferers aged above 18 years old were founded hypertension prevalence in Indonesia as many as 31.7%, where only 7.2% people who knew that they suffered from hypertension and it was only 0.4% cases sufferers who consumed hypertension medicine. It showed that 76% hypertension cases in community has not diagnosed or 76% people have not known that suffered from hypertension. (RisKesDas, 2010)

According to Setiawan research (2004), This research showed that hypertension prevalence in Java Island were as many 41.9%, approximately 36.6%–47.7% in every province. In the City prevalence were 39.9% (37.0%-45.8%) and in the village area were 44.1% (36.2%-51.7).

Based on the result of Cimahi city Health Department survey in 2013, there are 10,249 people suffered from primary hypertension meanwhile sufferers who had secondary hypertension were 13 people, it indicated that primary factor dominant than secondary factor. (Cimahi city Health Department, 2013)
Correlated to the stress in the globalization era, World Health Organization (WHO) reprimands us about global financial crisis on mental health condition of world people. According to WHO, Global financial crisis recently has made people in depression, stress, mental disorder, and easy hopeless feeling. (Prasetyorini, 2012)

The research conclusion is there is correlation between stress with hypertension complication prevalence on hypertension clients at Leuwigajah south cimahi Community Health Center. It is hoped the hypertension clients are able to identify the stress and know how to manage it in order to the disease will not become worst and cause the other complications. The previous study result based on the researcher done at Leuwigajah South Cimahi Community Health Center on January 30 to February 1, 2014, there were from 7 hypertension clients that 3 clients stated that they did not have degenerative of hypertension and they were not the smokers, alcohol consumers, and not consuming salted food as well but they had hypertension experienced because they had hard thinking or work under pressure and 4 people who stated many family burdens so that it made them had hypertension, hypertension causes by anxiety, and life style in consuming food irregular made them hypertension experienced. Furthermore, based on the interview result that researcher did on 3 officers of leuwigajah cimahi community health center area work has increased every years and hypertension disease is the second rank disease at that leuwigajah south cimahi community health center.

From that interview result above, the researcher was interested in carrying out the research’’

The research method used descriptive method with correlational design by cross sectional approach to obtain the data. The research aimed to identify stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community health center in 2014, to know the stress level description at Leuwigajah South Cimahi Community health center in 2014 and to see the correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community health center in 2014.

Method

The research method used descriptive method with correlational design by cross sectional approach to obtain the data. The populations in the research were all hypertension clients from Leuwigajah south cimahi community health center on August 2013-January 2014 were as many as 1.306 respondents. Sampling technique used in this research was accidental sampling. Samples in this research were as many as 90 hypertension clients at Leuwigajah South Cimahi community health center.

Data collecting technique and data that collected consist of primary and secondary data.

a. Primary data was data collecting done as directly by contributing the questionnaire included client identity or samples (stress scale on hypertension clients). By carrying out the assessment of DAS 42 stress scale accordance to lovibond (1995) that has been tested by damanic(2006). Which consist of 14 symptoms groups. Each group of symptom was given score between 0-3 that score as follows:

0 = none or never
1= sometime
2= usual
3= almost usual with has experienced

After the data were collected, counted and grouped into stress level accordance of lovibond DASS 42 as follows:

0-6 : mild stress
7- 23 : moderate stress
24- 29 : heavy stress
>30 : severe Stress

b. Secondary data

Secondary data is data that available at Leuwigajah south cimahi community health center consisted of hypertension clients that has been categorized become:

140/90 mmHg = mild hypertension
160/100 mmHg =moderate hypertension
>180mmHg =Heavy hypertension

After the data collected will be inserted into SPSS program become as follows:

4. = Mild hypertension
5. = Moderate hypertension
6. Heavy hypertension

Research instrument is tools that will be used to collect the data. Research instrument can be as, questionnaire, observation form, forms that correlates with data publisher and others. (Notoatmodjo, 2010). In this research, data collecting used DASS (Depression Anxiety Stress Scale) questionnaire, which developed by Lovibond in 1995, it has been translated by Damanik in 2006 (Damanik, 2006). Questionnaire were as many as 14 taken from number questionnaire of DAS 42 1,6,8,11,12,14,18,22,27,29,32,33,35, and 39 from Damanik in 2006 (Damanik, 2006).

Sphygmomanometers and stethoscopes are instruments that used to measure blood pressure. We can detect someone has or no the hypertension disease from the measure result and doctor diagnose of Community health center (Dewi, 2013).

Research procedure
1. Preparation Term
   a. Formulating the problem in the research place
   b. Deciding the research topic
   c. Cooperating with research field to preface study
   d. Making research proposal and instrument as well
   e. Carrying out the proposal seminar
2. Implementation Term
   a. Obtaining the permit to do the research at Leuwigajah South Cimahi Community Health Center.
   b. Giving explanation to the research team or friend who will help in the research to distribute the questionnaire and informed consent.
   c. Carrying out the questionnaire distribution to the hypertension clients, it is targeted to all respondents.
   d. Designing the questionnaire result that had been fulfilled by respondents.
   e. Implementing the process and data analysis up to the end of the final preparation.
   f. Taking the conclusion.
3. Final Term.
   a. Designing research result report.
   b. Presenting the research result.
   c. Research result documentation.
   d. Implementing the final presentation

Results
Research result was done by researcher to identify the stress level and hypertension prevalence on 90 hypertension clients as follows,

1. Stress level description

<table>
<thead>
<tr>
<th>Stress Level</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>8</td>
<td>8.9</td>
</tr>
<tr>
<td>Moderate</td>
<td>25</td>
<td>27.8</td>
</tr>
<tr>
<td>Heavy</td>
<td>33</td>
<td>36.7</td>
</tr>
<tr>
<td>Severe</td>
<td>24</td>
<td>26.7</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Percentage of the highest stress level was heavy stress level and severe. It was known from 90 respondents who described the heavy and severe achieved to 50%.
b. Hypertension Prevalence Description

Table 2 The description of hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community Health Center in 2014.

<table>
<thead>
<tr>
<th>Hypertension Prevalence</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>25</td>
<td>27.8</td>
</tr>
<tr>
<td>Moderate</td>
<td>31</td>
<td>34.4</td>
</tr>
<tr>
<td>Heavy</td>
<td>34</td>
<td>37.8</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The highest Percentage is heavy percentage, it was shown from total amount of 90 respondents that described of heavy hypertension reached 50%.

Table 3 The stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community Health Center in 2014.

<table>
<thead>
<tr>
<th>Stress Level</th>
<th>Hypertension Prevalence</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
<td>Heavy</td>
</tr>
<tr>
<td>Mild</td>
<td>6 (75%)</td>
<td>2 (25%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>7 (28%)</td>
<td>13 (52%)</td>
<td>15 (20%)</td>
</tr>
<tr>
<td>Heavy</td>
<td>8 (24.2%)</td>
<td>12 (36.4%)</td>
<td>13 (39.4%)</td>
</tr>
<tr>
<td>Severe</td>
<td>4 (16.7%)</td>
<td>4 (16.7%)</td>
<td>16 (66.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>25 (27.8%)</td>
<td>31 (34.4%)</td>
<td>34 (37.8%)</td>
</tr>
</tbody>
</table>

A few of respondents from 31 (34.4%) respondents who had moderate hypertension disease, meanwhile 2 (25%) respondents had mild stress, and 13 (52%) respondents had moderate stress. Furthermore almost a half of 12 (36.4%) had heavy stress and a few of 4 (16.7%) respondents had severe stress.

A mount of Respondents were as many as 34 (37.8%) respondents had heavy hypertension that obtained as follow, most of respondents were as many as 16 (66.7%) respondents had severe stress, and 13 (39.4%) respondents had heavy stress, 15 (20%) respondents had moderate stress, nobody of respondents who has not mild stress on heavy hypertension case. Statistic test result was obtained p value p, 0.001 < α (0.05) means Ho rejected, so there is correlation between stress level with hypertension at leuwigajah community Health Center.

Discussion

1. The description of stress level on hypertension clients at leuwigajah south cimahi Community Health Center in 2014.

Based on statistic test result above, there was the highest rate in that statistic as many as 33 (36.7%) respondents had heavy stress, it was caused by many stress trigger factors on communities at Leuwigajah South Cimahi Community Health Center such as Economy problems, family members who had health problems, social, and other health problems. It seems that the problem factors have not obtained the concern from Community Health Center officers and individual self. According to researcher after looking at the stress percentage of respondents were caused by psychology problems which triggered by health problems of family members, economy or other problems. Meanwhile the problems have been thought as the normal problems by the individual who had experienced it, while it is serious psychology problem should be cared because the stress stimulate the Epineprin enzym. The other factors are able to cause the stress on someone such as, family problems, economy factor, social and life experiences. Meanwhile, on the communities at community health center clients possible triggered heavy stress problems such as, economy, family health problems and daily life experience factors.

Based on the analysis above accordance with Nasir Theory, (2011) that stress sources in individual life can be caused by many factors such as, stress source in family, community and environment factors.
Those problems can cause heavy stress prevalence on communities become the highest rate. Most of the stress factors have not known and cared by communities especially at Leuwigajah Community Health Center area work.

2. The description of hypertension prevalence on hypertension clients at Leuwigajah Community Health Center in 2014.

The result of statistic test was obtained the highest rate as many as 34 (37.5%) respondents. High percentage is the description of hypertension prevalence rate at leuwigajah Community Health Center is high enough, so it means that it is needed the serious management in the future, besides curative from Community Health Center officers. Otherwise preventive and promotive are needed as well because hypertension is able to recovery from many aspects such as bio and psycho-sosial.

The primary preventive efforts are able to be implemented to prevent the hypertension prevalence such as, to change the high risk hypertension factors on the risk group of hypertension. The primary preventive efforts of hypertension such as food diet and good consume food, do exercise or sport routine, reduce the weight, reduce the alcohol consuming, stop smoking, and change the life style.

The health management in secondary term of hypertension that has re-occurred or to prevent it becomes worst by early detection.

This prevention in direct to treat clients and to reduce the implications more serious from disease, namely through diagnose early and the provision of treatment. If the detection is not done early and therapeutic not given immediately then will happen clinical symptoms that is injurious.

The implementation management of tartier the efforts to prevent complication heavier or death. Prevention tartier the prevention of various way because of worse, with the purpose of improving the quality of life of patients. The Prevention tartier focused on rehabilitation and recovering from to happen ill to minimize pain, disability, and improve the quality of life implementation management of tartier (Triyanto, 2014)

c. The correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah Community Health Center in 2014.

Based on the results of research on table 4.3 obtained the result that p value (0.001) < α (0.05) which means Ho rejected, it means there are relations between the level of stress with the hypertension prevalence. This is because after conducted statistical tests by linking between the level of stress with the hypertension prevalence obtained the results of where most were respondents between the level of stress raising up with a severe hypertension have the highest percentage which is 16 people (66.7%). It stated that there had been very significant relations between the level of stress with the hypertension prevalence at Leuwigajah Community Health Center area work.

According to researchers analysis that the more trigger stress experienced someone the more large someone it had hypertension, it is caused by because stress will spur the nervous system sympathetic. Sarap sympathetic will spur blood vessels, as excitative emotion. The medulla adrenal issued epineprin that causes vasokontriksi blood vessels. Vasokontriksi cause to flow blood to the kidney reduced so stimulate coating renin by the kidneys.

Mechanism the hypertension started since the enactment of angiotensin II from angiotensin I by angiotensin converting enzyme (ACE). The ACE in the role important in regulating blood pressure. The blood contains angiotensigenen who in the production in the liver. Next by a hormone renin will be converted a angiotensin I, next by ACE that is in Lung-pulmonary, angiotensin I converted into angiotensin II. Angiotensin II is a substance occurring naturally that causes the increase in blood pressure through vasoconstriction blood vessels and retention salt and water. (Smeltzer, 2003)

B That theory is already proved by researchers that someone who has heavy stress will suffer from a disease hypertension, this research in line with the results of research of prabowo in 2005. It showed that the proportion of stress among respondents as much as 68.29 % and the proportion of hypertension among respondents 68.29 % as much as. Testing shows chi-square with 5 % degrees and it suggests meaningful there was a correlation between stress and with the hypertension prevalence(p value = 0.0001). Based on the data and the theory of stress and above the incident hypertension having relationships because someone who undergoes pattern stress usually fed as well as life style irregular. Food consumption pattern irregular like of foods high in salt would result in disease hypertension. Whereas if it is considered from the perspective of pathophysiology someone who undergoes stress will automatically stimulate the nervous system sympathetic and sympathetic nervous system that is what will activate in the cause of stress hormones.
According to the results of research although there is a relationship between stress with the occurrence of hypertension, but at some people who have hypertension not caused by stress, it is the presence of other factors that also affect not researched as lifestyle that irregular, smoking habit, culture, the acts of descent and obesity. (Dalimartha dkk, 2008)

Conclusion
Based on the research done which have taken place at leuwigajah south Cimahi Community Health Center 2014 about “Correlation of stress level with the hypertension prevalence on clients with hypertension” so it is obtained the conclusion as follows,

1. From 90 respondents had hypertension disease at Leuwigajah Community Health Center was obtained the highest respondent rate with heavy stress were as many as 33 (36.7%) clients.
2. From 90 respondents had hypertension disease at Leuwigajah Community Health Center was obtained the highest respondent rate with severe stress were as many as 34 (37.8%) clients.
3. There is correlation between stress level with hypertension prevalence at Leuwigajah Community Health Center in 2014 with p value (0,001) < α (0,05) .

Acknowledgement
This research was supported by STIKes Budi Luhur. We thank our colleagues from STIKes Budi Luhur who provided insight and expertise that greatly assisted the research, although they may not agree with all of the interpretations/conclusions of this paper. We thank Kiki Buqori for assistance with particular technique and Ilbert Rizal for comments that greatly improved the manuscript.

References
Arora, Anjali. 2008. 5 Langkah Mencegah dan Mengatasi Stress. Jakarta: BIP


Abstract
Tuberculosis (TB) is a contagious disease that attacks the organs of the body, especially the lungs caused by the stem bacillus of Mycobacterium tuberculosis. Disease of tuberculosis is contagious if a person breathes the polluted air of Mycobacterium tuberculosis bacteria released during TB cough. Indonesia as the third largest contributor in the world after India and China. The number of cases of tuberculosis in children in Indonesia is about one fifth of all cases of tuberculosis. After immunization is given, the risk of disease that can be prevented by BCG immunization such as tuberculosis will be very low. Therefore, it is important that maternal obedience in the delivery of BCG immunization in children. Research Objective to know the relationship of mother knowledge with obedience of giving BCG immunization to child of tuberculosis at Pagaden Subang Health Center. The research design used was analytical with cross sectional approach. The population studied were all mothers with children aged 0-5 years who went to Poly TB Puskesmas Pagaden Subang as many as 40 people with sampling technique. The research instruments are questionnaires and interview sheets. Univariate with percentage frequency and bivariate with perarson chi – square data analysis. The result of the research p value = 0.006 ≤ value α 0.05, this shows there is correlation between mother knowledge with compliance of BCG immunization at child of tuberculosis at Pagaden Subang Health Center. It can be seen that from 40 respondents, most of the respondents have poor knowledge of 25 respondents (62.5%), 40 respondents obtained most of the respondents giving BCG immunization not on time as much as 28 respondents (70%).

Key words: BCG Immunization, compliance, knowledge, tuberculosis children

Introduction
Disease Tuberculosis (TB) is a contagious disease that attacks the body organs, especially the lungs caused by the stem bacillus that is Mycobacterium tuberculosis. Mycobacterium tuberculosis also attacks the body organs such as joints, intestines, lymph glands, and the lining of the brain. Disease of tuberculosis is contagious if a person breathes the polluted air of Mycobacterium tuberculosis bacteria that is released at the time of cough tuberculosis (Pujiastuti, 2011).

In Indonesia tuberculosis is still a major public health problem and the leading cause of death number 1 for infectious diseases. The World Health Organization's latest tuberculosis report still places Indonesia as the 3rd largest contributor in the world after India and China. The number of tuberculosis cases in children in Indonesia is about one fifth of all cases of tuberculosis (Dwiastuty, 2012). Data on cases of child tuberculosis in Indonesia in 2010 was 9.4% of all cases of tuberculosis, 2011 to 8.5% and in 2012 was 8.2% (27,368 cases). The variation of each province is very large, ie 1.8% - 15.9%. This illustrates the diagnostic quality of childhood tuberculosis varies greatly at the provincial level (Ranuh, 2014).

According to Riskesdas 2013 the prevalence of tuberculosis based on a diagnosis of 0.4% of the population by province, the highest prevalence of pulmonary TB based on the diagnosis ie. West Java, East Java and Central Java. By sex the number of cases in men is higher than that of women 1.5 times. In the age group 0 -14 years increased by 2014 as much as 7.10% and in 2015 8.59%. Proportion of TB patients recorded or treated as many as 48.0% in West Java with a target of at least 70% (Health Profile of RI, 2015) In West Java which has 18 districts or cities the highest number of cases of tuberculosis are Bogor 115 Cases, Bandung 61 cases, Garut 59 cases, Subang 31 cases. (West Java Health Profile, 2014).
In Subang city, the highest rate of tuberculosis morbidity in Pagaden Puskesmas was 57 children. Efforts made by Pagaden Puskesmas with the highest pulmonary tuberculosis in children by increasing the knowledge of mothers with the availability of PMO (Drinking Drugs) and counseling activities conducted every Wednesday when mothers take tuberculosis medication to Puskesmas (Health Profile of Subang, 2016).

One effort that can be done to prevent children from tuberculosis disease is by BCG immunization. BCG immunization given at infant age as primary immunization to prevent tuberculosis. (Hadinegoro, 2015).

Immunization of BCG given at age 2 - 3 months and not necessarily repeated, a vaccine containing inactivated tuberculosis with injection in the upper arm region (intracutane) (Karningsih 2011).

The high incidence rate of tuberculosis in children can be affected by several factors such as environmental factors, especially poor air circulation can increase transmission. Opportunities of tuberculosis transmission are increased when the patient's saliva contains acid-resistant acid bacilli, severe and strong cough. Basilic tubercle is slightly secreted in endobronchial children with pulmonary tuberculosis, lack of maternal adherence to BCG immunization. If the mother is not obedient in immunizing the baby BCG then the antibodies that the baby has to fight the disease tuberculosis will weaken. As a result the baby will be susceptible to tuberculosis (Indarwati, 2008).

In certain circumstances immunization cannot be implemented in accordance with an agreed schedule. In other words, children do not yet have optimal antibodies because they have not received complete immunization, then the delay in the agreed immunization schedule will lead to increased risk of contracting if the disease is to be avoided. After immunization is given, the risk of disease that can be prevented by BCG immunization such as tuberculosis will be very low. Therefore, it is important that maternal obedience in the delivery of BCG immunization in children (Ranuh et al, 2014).

Compliance is a phenomenon similar to self-adjustment, the difference being in terms of the influence of legitimacy (contrary to coercion or other social pressure), and there is always an individual that is the authority (Boeree, 2008).

Factors affecting maternal obedience in immunizing infants are education, accommodation, modification of environmental and social factors, change of therapy model, age, family support, improvement of professional health interaction with clients, knowledge. Knowledge is the result of knowing, and this happens after people have sensed a particular object. Knowledge or cognitive is a very important dominant in shaping one's actions (over behavior). Behavior based on knowledge will be more lasting than behavior that is not based on knowledge.

Based on a preliminary study conducted by the author in Subang District Health Office that compared with the implementation of immunization of Tuberculosis patients with the highest morbidity is in the working area of Pagaden Puskesmas. In the working area of Pagaden Puskesmas obtained data on the number of visits tuberculosis in children in 2016 recorded 57 children with tuberculosis and in 2015 recorded 15 children with tuberculosis. Maternal knowledge of BCG immunization in TBC children measured through questionnaire sheet showed from 20 respondents with good knowledge as many as 10 people 50%, less knowledge as much as 6 people 37.5% and knowledgeable enough as much as 4 people 12.5%. Thus there is an increase in cases of pulmonary tuberculosis in children and insufficient knowledge of mothers and inadequate knowledge of mothers about adherence to BCG immunization in children with tuberculosis. The coverage of BCG immunization in infants at Pagaden Puskesmas in 2016 reached 86.2% (Subang DHO, 2016). 16 out of 20 mothers showed BCG immunization did not match the recommended or recommended schedule and some showed no BCG immunization.

The purpose of this research is to know the relationship of mother knowledge with obedience of giving BCG immunization to child of tuberculosis at Pagaden Subang Health Center.

Method

The design of this study included analytical research with cross sectional approach (Riyanto, 2011). This research was conducted at Poly Tuberculosis Puskesmas Pagaden Subang in May 2017. The population in this study were all mothers with children aged 0-5 years amounted to 40 people. The sampling of this research was done by total sampling technique.

Data collection tools in this study are questionnaires and interview sheets. The questionnaire contains the respondent characteristic data which includes the child's name (initial), age / child's birth date, parent's name, age, address, occupation, education. For mother's knowledge variable about
compliance of BCG immunization questionnaire containing 22 questions. Measuring tool for maternal obedience variable in giving BCG immunization in the form of interview sheets amounted to 6 questions about the respondent’s name, age, time of BCG immunization, age of BCG immunization, information, source.

The validity test is done at Puskesmas Gunung Sembung to 30 respondents by using pearson product moment. Result of validity test is valid with r value count (0.466 - 0.509) > r table (0.361). Reliability on the questionnaire of knowledge level in this study was tested by using KR-20 formula, obtained value 0.983 > 0.6 with the result it can be decided that knowledge with compliance of BCG immunization in children tuberculosis declared reliable and can be used as research measuring tool. Processing and data analysis using computer. The analysis consisted of univariate analysis and bivariate analysis.

**Results**

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>25</td>
<td>62.5</td>
</tr>
<tr>
<td>Enough</td>
<td>6</td>
<td>15.0</td>
</tr>
<tr>
<td>Good</td>
<td>9</td>
<td>22.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on the above table it can be seen that from 40 respondents showed some respondents had less good knowledge that as many as 25 mothers (62.5%).

**Table 2. Distribution of Frequency of Compliance of BCG Immunization in Tuberculosis Children at Pagaden Subang Community Health Center 2017**

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncompromising</td>
<td>28</td>
<td>70.0</td>
</tr>
<tr>
<td>Obedient</td>
<td>12</td>
<td>30.0</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on the above table it can be seen that from 40 respondents obtained most respondents did not provide BCG immunization with obedience that is as much as 28 respondents (70.0%).

**Table 3 Maternal Knowledge Relations with Compliance of BCG Immunization in Tuberculosis Children at Pagaden Subang Health Center**

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Compliance of BCG Immunization</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not obey</td>
<td>%</td>
<td>Obedient</td>
</tr>
<tr>
<td>Less</td>
<td>19</td>
<td>76.0%</td>
<td>6</td>
</tr>
<tr>
<td>Enough</td>
<td>6</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
<td>33.3%</td>
<td>6</td>
</tr>
</tbody>
</table>
Based on the above table shows that in poorly informed mothers as much as 19 respondents (76.0%) gave BCG immunization disobediently. The result of statistic test is got $p = 0.006 < \alpha (0.05)$ so Ho is rejected, so it can be concluded there is a significant correlation between mother knowledge with obedience of giving BCG immunization in child tuberculosis.

Discussion
Relationship of Mother Knowledge with Compliance of BCG Immunization in Tuberculosis Children at Pagaden Subang Health Center

Based on the research it was found that from the number of 40 respondents in the badly knowledgeable mothers as much as 19 respondents (76.0%) gave immunization of non-adherent BCG. The result of statistical test is $p$ value $= 0.006 < \alpha (0.05)$ so that Ho is rejected, so it can be concluded there is a significant correlation between mother knowledge with compliance giving BCG immunization in child tuberculosis. That the lack of knowledge of this mother can be caused by education, result of research most of education of respondent is elementary and junior formal and non formal education can influence someone in taking decision and behave, education influence learning process higher one's education then hence person can receive a lot of information. Information or mass media, lack of information from health workers regarding the provision of BCG immunization as one of them through counseling about the time of immunization in children. Age, respondents mother aged 23-30 years. Age affects the ability to catch and the mindset of a person getting older will also develop the ability to catch and the mindset so that knowledge gained better.

Factors that support compliance according to Sakett in Niven (2013) is education. Most of respondent's education is elementary, junior high. Formal and non formol education can influence a person in making decisions and behave, education affects the learning process the higher the education of a person then the person can receive a lot of information. Knowledge, knowledge of respondents less good. Behavior based on knowledge will be more lasting or long lasting than behavior that is not based on knowledge. This is because knowledge is a very important domain for the formation of one's actions.

Mothers who are not willing to immunize their babies can be caused by not understanding properly and deeply about basic immunization. In addition, less attention in bringing the baby immunization on schedule. A lack of awareness will affect mothers in obtaining information about immunization, after realizing the importance of the benefits of maternal immunization can bring the baby to be given BCG immunization in accordance with a predetermined schedule.

It shows that the relationship of mother's knowledge with the obedience of BCG immunization on tuberculosis child is going strongly, the higher or better the mother's knowledge about BCG immunization hence the mother's BCG immunization can obey so hence the alternative hypothesis (Ha) in this research is accepted. This study is in line with research conducted by Senewe et al (2017) which states that there is a relationship between maternal knowledge and compliance level.

Benefits of maternal obedience in the provision of immunization in children ie children have immunity against the disease to be avoided. For BCG immunization is immunization to prevent BCG immunization disease. If the mother is not obedient to a predetermined schedule then the child does not have immunity to avoid the disease to be avoided so that the risk of disease that will be avoided will increase.

The role of nurse to improve mother's knowledge and obedience in giving BCG immunization that is as educator or educator that is assisting client in increasing level of health knowledge, disease symptoms even action given so that change of behavior of client after health education. The role of the nurse as a consultant is where consultation on the appropriate nursing issues or actions to be given, this role is done at the request of the client to the information about the purpose of the nursing service provided

Conclusion
The conclusion of this research is it can be seen that from 40 respondents obtained most of respondent mother have knowledge less good 25 respondent (62.5%), most of respondent mother give BCG immunization not on time as much 28 respondents (70%), there is relationship between knowledge Mothers with BCG immunization compliance in children with tuberculosis at Pagaden Subang Public Health Center in 2017. With $p$ value $(0.006) \leq \text{value } \alpha = (0.05)$. It is expected for health workers continuously and programmed with appropriate media to improve mother's knowledge.
about BCG immunization and how to spread tuberculosis in children. For the next researcher can do research other factors such as the influence of health education by using certain media such as leaflet, poster, flipchart, etc. to mother's knowledge about BCG immunization, researcher can then do research on other factors that can influence maternal obedience in giving immunization BCG such as education, accommodation, environmental and social modification, therapeutic model changes, enhanced interaction of health professionals with patients.

Acknowledgement
Gunawan Irianto, dr., M.Kes (MARS) as Chairman of Stikes General A. Yani Cimahi.

References
(2016). *Profil Kesehatan Subang*. DINAS KESEHATAN SUBANG.
Abstract
One out of ten people in the world suffers from hypertension. Indonesia is the 10th country with the highest prevalence of hypertension in the world (Depkes RI, 2009). Hypertension is the most common disease faced by the older age groups. Increased cases of hypertension in elderly become a big problem (Riskesdas, 2013). However, the treatment of hypertension has been focused only on medicine. This study aims to determine the effect of meditation on blood pressure in elderly hypertension at Panti Werda Karitas Cimahi West Java Indonesia. This study used pre-experiment one group pretest-posttest design. The sample of 18 elderly hypertensions are taken by total sampling technique. The result shows that the difference of systolic blood pressure before and after meditation is 18.89 mmHg. While the difference of diastolic blood pressure before and after meditation is 9.44 mmHg. The result of statistical test obtained p value < 0.001. In conclusion, meditation is highly effective to decrease blood pressure in elderly hypertension. Meditation can be recommended one of the influential therapy interventions in nursing care of gerontology to reduce hypertension in the elderly. Furthermore, this influential therapy can be incorporated into the schedule of daily activities in the elderly. They can meditate independently after being trained.

Key words: Blood pressure, elderly, hypertension, meditation

Introduction
One out of ten people in the world experiences hypertension. World Health Organizations (WHO) proves that hypertension contribute to a global burden of worldwide epidemic. The condition caused by high blood pressure remains to a major issue of global concern both in developed and developing countries. In fact, almost of 8 million of people in the world and 1.5 million of people in South East were killed by this harmful disease (Wade, 2016).

Indonesia is the 10th country with the highest prevalence of hypertension in the world as well as Myanmar, India, Sri Lanka, Bhutan, Thailand, Nepal and Maldives (Depkes RI, 2009). The prevalence of hypertension in Indonesia faced by people after the age of 18th (26.5%) where Bangka Belitung (30.9%) emerges as the first province with the highest number of hypertension. It is followed by South Kalimantan (30.8%) and East Kalimantan (29.6%).

The high prevalence of hypertension rapidly emerges in the elderly groups. According to Riskesdas, (2013) the age of sufferer on the prevalence of hypertension can be divided into several groups: people at 25-34 years old (14.7%), 35-44 years old (24.8%), 45-54 years old (35.6%), 55-64 years old (45.9%), 65-74 years old (57.6%) and after 75 years old (63.8%). Indonesian older population is growing faster every year. Nowadays, there are 16 million of people at the age of 65th and this assumes to be increased into 25.5 million in 2020 or around 11.47% from the total population in Indonesia. Therefore, Indonesia take the 4th rank with the highest aging population under Tiongkok, United States, and India (Priyoto, 2015).

As the case of elderly hypertension rising quickly in Indonesia, it takes a part to the dangerous global issue around the world. In this case, government has been cooperated with Indonesian Society of Hypertension to reduce this harmful disease by creating The Centers for Disease Control and Prevention. This organization makes the rule and share the knowledge to reduce hypertension (Depkes RI, 2010). Therefore, Indonesian government has been effort to improve and rise more logistic due to avoid the risk factor causing heart disease and hypertension. In addition, this program aims to develop human resources and changes the charge system to maintain and evaluate its control. Thus, the rate of hypertension prevalence declined and can be controlled (Depkes RI, 2010).
The treatment hypertension using anti-hypertension medicine and non-pharmacology therapy by controlling weight, stop smoking, and doing sport routinely are useful to reduce hypertension (Dalimartha, 2008). Furthermore, yoga, meditation and hypnosis can control autonomic nervous system that is highly effective to reduce blood pressure (Puspitasari, 2014). Nowadays, therapy given to elderly hypertension is pharmacology rather than non-pharmacology therapy. Moreover, non-pharmacology takes a great influence in reducing hypertension (Triyanto, 2014).

Meditation is one out of several non-pharmacology therapies to reduce hypertension. It is easier to be conducted for all people in all ages, both adult and elder group. When they got meditation, the oxygen consumptions and metabolism system in their bodies will optimally decrease. The level of oxygen consumption in meditation people is lower (7%) than in normal condition. In this process, the vasodilator including adenosine is released into the space between cells that affects to slowly electrical conduction, slow heart rate and rhythm and vasodilation on blood vessels (Gunawan, 2012).

Acetylcholine will be constantly produce during meditation and it affect to less activity on hypothalamus and catecholamine (adrenaline and non-adrenaline). On the other hand, acetylcholine in the blood will be more widely used by parasympathetic system and it will dominantly take a great role than sympathetic system. Therefore, meditation affects to relaxation, makes slow heart rate and rhythm and maintains normal blood pressure (Puspitasari, 2014).

In addition, nurses can help to solve the problem of elderly hypertension using meditation as non-pharmacology therapy. Meditation is one of easier therapy for elderly hypertension since it shows the easier movement that can be trained independently. As the phenomenon of elderly hypertension arise, it forces the author to conduct research dealing with the effects of meditation on blood pressure in elderly hypertension at Panti Werda Karitas Cimahi West Java Indonesia.

Method
This study uses pre-experiment test employing one group pretest and posttest design. It is illustrated in figure below:

![Fig 1. Research Framework](source)

Elderly hypertension in Panti Werda Karitas Cimahi are participated in this research. They are not suffering from dementia, language disorder, and movement disorder. Therefore, the total of elderly hypertension in Panti Werda Karitas Cimahi are 18 respondents and it employs total sampling technique.

The instrument of this research involves SOP meditation, mercury sphygmomanometers, and stethoscope. In this process, the author firstly explained the purpose and the benefits of meditation for elderly hypertension and making a procedure dealing with respondents’ rights during conducting this research. Then, the author measures blood pressure in elderly hypertension as pre-test data. The respondents are allowing to relax by sitting freely on the chair before the treatment is given. However, they asked not to give many movements and untalkactive. The author removes the excess clothing by rolling up the sleeves and put BF cuff flow in the left-armed. This is very useful to get the accurate result on blood pressure measurement. Finally, the authors provide and gives the informed concern sheet that must be signed by all respondents. In this case, 18 elderly hypertensions are agree to participate in this research.

The authors demonstrate and promote the procedure of meditation as long as 15 minutes for
each of respondents in Panti Werda Karitas Cimahi. They offer the bond to be signed by respondents including time and place for meditation. Both of the authors and respondents choose respondents’ room for meditation in which the room must be clean, neat and clear from the noises. Meditation is conducted at 4.00 – 5.00 pm since they are in the free time and meditation is free from any restrictions.

Furthermore, the authors use meditation as an intervention. In this process, the authors spent around 15 minutes per respondent. The steps are conducted as follow:
1. Respondents must follow the authors’ instructions
2. The authors ask them to wear the loose, soft, and calming clothes.
3. The authors ask them to sit freely on the comfortable chairs where they can relax
4. Respondents follow the instructions as follows:
   a. Closing their eyes
   b. Resting their hands on the knees
   c. Observing the rising and falling of the breathing
   d. Relaxing all of muscles
   e. Considering the positive affirmation “I want to be healthy, I want to reduce highly blood pressure, and I want to concentrate my mind.”
   f. Being sincere with all moment
   g. Focusing on deep breathing if something wrong happened
   h. Meditation take 15 minutes to be conducted
   i. Opening their eyes.

The authors evaluate and ask respondents feeling after they got meditation. Then they discuss to have another meeting in the different time and place. It needs around 15 minutes for meditation in once a day and it will be treated in three days a week. The authors measure blood pressure of the respondents after all process and procedure are given appropriately.

Blood pressure is measured in the last day of meditation and the respondents are allowed to get sitting freely in 5 minutes to get the normal heart rate and rhythm. According to Mubarak, Indrawati and Susanto (2015), blood pressure measurement after doing an activity will be better to be conducted in 5-10 minutes due to getting the accurate results.

The finding shows that blood pressure of all respondents is decreased. However, the blood pressure in 2 out of 18 respondents is not significantly decreased in which their blood pressure are 150/90 mmHg. There are several influential factors causing this condition include having diet and smoking. During conducting the research, the author did not know all of respondents’ daily activities and these factors are out of the authors’ control.

The authors move to another step by analyzing the data after completely collected. The process of analysis uses computerization system and the results are derived by Shapiro-Wilk due to a few of samples (≤50 respondents). P value 0,21 in systolic blood pressure and P value 0,08 in diastolic blood pressure. The finding shows that blood pressure before and after meditation is normally distribution. Bivariate analysis in this study is used to analyze the differences of blood pressure before and after meditation using t-test dependent.

Results

Table 1. The average of systolic and diastolic blood pressure in elderly hypertension before meditation

<table>
<thead>
<tr>
<th>Blood Pressure</th>
<th>Average (SD)</th>
<th>CI 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sistolik (n=18)</td>
<td>160,00 (11,88)</td>
<td>154,09 - 165,91</td>
</tr>
<tr>
<td>Diastolik (n=18)</td>
<td>90,00 (11,88)</td>
<td>84,09 - 95,91</td>
</tr>
</tbody>
</table>

Table 2. The average of systolic and diastolic blood pressure in elderly hypertension after meditation

<table>
<thead>
<tr>
<th>Blood Pressure</th>
<th>Average (SD)</th>
<th>CI 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sistolik (n=18)</td>
<td>141,11 (11,32)</td>
<td>135,48 - 146,74</td>
</tr>
<tr>
<td>Diastolik (n=18)</td>
<td>80,56 (5,66)</td>
<td>77,74 - 83,37</td>
</tr>
</tbody>
</table>
Table 3. The differences of systolic and diastolic blood pressure in elderly hypertension before and after meditation

Table 3 shows that the differences of systolic blood pressure before meditation is 160,00 mmHg with deviation standard 11,88 and after meditation is 141,11 mmHg with deviation standard is 11,32. Likewise, the differences of diastolic blood pressure before meditation is 90,00 mmHg with deviation standard 11,88 and after meditation is decreased to 80,56 with deviation standard is 5,66. Statistical test obtained that p value < 0,001, it refers to meditation affects to decrease blood pressure in elderly hypertension.

Discussion

1) The average of systolic and diastolic blood pressure before meditation

The finding shows that all of respondents get isolated systolic hypertension with the difference of systolic blood pressure is 160,00 mmHg. This finding is appropriate to Martin and Mardian research (2016) which proved that almost 20 respondents experience isolated systolic hypertension with the average of systolic blood pressure are 148,25 mmHg.

In isolated systolic hypertension, systolic blood pressure more than 140 mmHg but diastolic is less than 90 mmHg (Darmojo, 2011). This condition caused by several factors including age and gender (Dalimartha, 2008). Data of this study prove that respondents are in 68-95 year old involving 5 males and 13 females.

The age of respondents influentially affects to isolated systolic hypertension since it is related to aging process causing disability or failed to get cells regeneration (Priyoto, 2015). In this case, heart and vessels are going to change structurally and functionally as people grow older including arterial stiffness or decreased aortic elasticity. This is caused by increasing collagen production and losing elasticity in blood vessel layers. Arterial intima layers become thickened and it improve potassium. This condition reduces aortic compliance and affects to widely blood vessels resulted in increasing systolic blood pressure (Stanley&Beare, 2012).

The finding shows that 13 out of 18 elderly hypertensions are female respondents. It means that almost of female respondents in Panti Werda Karitas Cimahi suffer from hypertension. It is appropriate to Darmojo (2011) who stated that around 6-12 % after the age of 60th suffer from systolic hypertensions especially female. Another research by Sudiarto, Wijayanti and Sumedi (2007) prove this finding which stated that 20 females out of 30 respondents experienced isolated systolic hypertensions.

This condition caused by menopause experienced by female at the age of 68 – 95th. In fact, estrogen hormone which provide the crucial role as well as stimulates maturation in their reproductive organs, maintains the structure of normal skins and blood vessels is slowly decreased. Therefore, endothelial dysfunction is occurred causing highly activity in sympathetic nerves. This affects to renin-angiotensin II and resulted in isolated systolic hypertension (Susilo, Wuladari, 2011).

Isolated systolic hypertension is the higher risk factors of heart failure, stroke and chronic kidney disease for the elder group. Systolic blood pressure will be in 140-159 mmHg while diastolic is in <90 mmHg that caused high morbidity and mortality of cardiovascular disorder significantly. This condition gives 3 times of chance in female mortality than male (Lewa, Pramantara, Rahayujiati, 2010). Result and discussion proved that all of respondents get isolated systolic hypertension before meditation therapy is given.

2) The average of systolic and diastolic blood pressure after mediation

The findings show that both systolic and diastolic blood pressure are in 141,11/80,56 mmHg. It means that these blood pressure are reduced after meditation therapy. This finding shows the similar
result to Harmilah, Nurachmah and Gayatri (2011), they proved that systolic blood pressure is decreased to 25 mmHg and diastolic is in 8.64 mmHg after meditation is being trained.

In this study, the authors use two types of mediation including breath and concentration. Breathing process become one strategical and influential mediator between mind and soul. In this study, the respondents use diaphragmatic breathing while mediation where abdominal muscles with the deep breath is placed under the umbilicus. Inspiration volume and oxygen consumption in blood vessels arise while breathing and it stimulates nitric oxide. This type of oxide belongs to vasodilator in managing blood pressure. Nitric oxide is released from arterial and arteriolar endothelium which provides the relaxation in smooth muscle causing blood vessels vasodilation. People who suffer from hypertension will experience nitric oxide disorder since it cannot optimally produce if it is not being stimulated. Therefore, nitric oxide will be produce by doing mediation that make blood vessels relaxed (Khrisna, 2013).

On the other hand, mediation is given to get concentration on mind and breathing. Concentration practice while breathing affect to low stimulation on stressor and it resulted to production of adrenaline and non-adrenaline hormone in hypothalamus. This condition will give limited activity in sympathetic nerves resulted in blood vessels vasodilation (Mubarak, Indrawati & Susanto, 2015).

The other factor beside two factors contributing to decreased blood pressure is the successful cooperation between respondents and the authors. All of respondents follow the instruction and doing mediation rightly until it is done. Iskandar (2014) highlight, mediation will be effective and beneficial when it becomes a routine activity and perceived a balanced condition for both mind and soul. Widodo and Purwaningsih (2013) proved that mediation will increase healthy condition for elderly hypertension. In conclusion, mediation is optimally effective in reducing hypertension in elderly.

3) The effect of mediation to elderly hypertension

The findings show that blood pressure in elderly hypertension is change after mediation. The average of systolic blood pressure before and after mediation decrease to 18.89 mmHg while diastolic blood pressure changes into 9.44 mmHg. Statistical test resulted I p value <0.001. It shows that mediation significantly affects to reduce blood pressure in elderly hypertension.

The findings are appropriate to the research by Suardana and Maryati (2014) which proved that mediation affects to blood pressure both systolic and diastolic. In fact, these blood pressure before mediation reach to 150.40/98.50% and after mediation they reduce into 145.30/91.80 mmHg with p value for systolic is 0.022 and p value for diastolic is 0.047.

The positive effect of mediation derived by the successful research. Mediation is conducted in a clean, neat and clear room in Panti Werda Karitas Cimahi. These comfortable room makes all of respondents can concentrate and being comfortable. According to Gunawan (2012) there are three factors to reach the effective mediation include socio-environment, mediation posture and concentration.

Mediation posture used in this research lead into several step. The respondents is sitting relaxed in a comfortable chair firstly. The neck should straighthly have relaxed as well as the head, hands must rest on the knees, close the eyes and put the positive mindset. The clean environment and appropriate mediation posture will give the balanced condition and our body will spend minimum energy and will be healthier (Widianto, 2011).

The findings are appropriate to the theory of mediation effect to blood pressure. When people get mediation, the level of acetylcholine in their blood will be constant due to the less of activity in hypothalamus and adrenaline and non-adrenaline is significantly reduced. On the other hand, acetylcholine in blood will be more produced and will be widely used by parasympathetic nervous system. Therefore, people will be more relaxed, get slow respond of heart rate, and normal blood pressure while meditation (Puspitasari, 2014).

In addition, people will be more concentrated and relaxed during meditation. In fact, they are able to control the emotion and dominate the situation inside. The oxygen consumption will be reduced as well as metabolism system. Oxygen consumption for people during mediation is lower (17%) than normal condition. The oxygen consumption will significantly decrease when body feel relaxed. Therefore, the vasodilator including adenosine is released into the space between cells that affects to slowly electrical conduction, slow heart rate and rhythm and vasodilation on blood vessels (Gunawan, 2012).
Mediation in once a day around 15 minutes and it is routinely conducted in 3 days is very effective to reduce blood pressure in elderly hypertension. However, the blood pressure of 2 males at the age of 75-80th out of 18 respondents doing meditation are not significantly reduced. In fact, their blood pressure after meditation are 150/90 mmHg. According to Mubarak, Indrawati, and Susanto (2015) their blood pressure is getting exceed from the normal blood pressure for elderly hypertension at least as 140/90 mmHg.

The authors assume that this insignificant blood pressure derived from uncontrolled diet and smoking. They confess that they always eat salty foods and eggs. However, the authors ask them to avoid this two usual conditions since it is very harmful for elderly hypertension. According to Dalimartha (2008), diet and smoking are two risk factors affect to blood pressure. In fact, salty food, or food contained fat and cholesterol can significantly improve the level of blood pressure.

The excessive iodine in our body will affect to high plasma volume, quick heart rate and high blood pressure as it is followed by iodine excretion. Likewise, it unconsciously creates the constriction of blood vessels in kidney and quit the blood flow. Therefore, kidney has the function to produce angiotensin to create high blood pressure and blood is optimally flowing in our body. This phenomenon is similar to fat and cholesterol since both of them can produce vascular plaque in blood vessels. In fact, the constriction of blood vessels causing the high and quick heart rate and resulted in hypertension (Triyanto, 2014).

When people smoking, nicotine is indirectly absorbed through the skins, nose, mouth, blood vessels until the brain and losing epinephrine hormone. It belongs to another factors caused constriction in blood vessels in the brain. Therefore, they will suffer hypertension caused by vasoconstriction in brain (Triyanto, 2014).

The findings show that blood pressure of the respondents are optimally reduced after meditation. They realized getting another positive responds include the better condition of their body. As Prayitno (2014) stated that meditation is assumed to give the normal functions of the brain as well as the feeling. The healthier condition makes happier feeling arise. Otherwise, the negative feeling includes angry, envy and depressed will be easier to be perceived if there is negative condition in our body. Therefore, it can be recommended for further research dealing with the effects of meditation to depression or the quality of elderly life.

The findings are expectedly to be an alternative way in applying mediation to reduce blood pressure in elderly hypertension as non-pharmacological therapy. In addition, there are several factors contributing to high blood pressure includes diet, physical activities, and smoking.

**Conclusion**

The findings show that the average of blood pressure in elderly hypertension before mediation is 160.00/90.00 mmHg while after mediation it is decreased into 141.11/80.56 mmHg. There are the differences of blood pressure before and after meditation as it proves by systolic blood pressure which changes into 18.89 mmHg and diastolic blood pressure reduced to 9.44 mmHg. Bivariate statistical test obtained p value < 0.001. It proves that meditation give the great influences to reduce blood pressure in elderly hypertension.

Meditation therapy is recommended as an influential intervention in nursing care of gerontology especially for elderly hypertension. This therapy can be a new routine activity for elderly hypertension since it is very beneficial for them. Furthermore, it can be easier and can be conducted independently.

The further research can investigate more about the benefits of meditation employing the different method and involving controlling group for the samples due to comparing the samples treated by meditation and another group without meditation therapy. For example, conducting research dealing with the effects of meditation to the quality of elderly life or to the stressful condition.

**Acknowledgment**

Some funding for this research was supported by the Stikes Jenderal Achmad Yani Cimahi Jawa Barat Indonesia.

**References**


The Influence of Logo Therapy on the Meaning life of Elderly with Stroke in Padalarang District in 2017

Oop Ropei
Nursing Science Dept School of Health Sciences Jenderal Achmad Yani
Email: oopropei@ymail.com

Abstract

Elderly stroke experienced symptoms of nerve function deficit such as paralysis which resulted in limited ability of a person to perform daily activities (Muttaqin, 2008). Someone who is paralyzed and suffering will appear psychosocial problems for an example the decline in the meaning of life (Maryam, 2008). Elderly who have psychosocial problems, requires a nursing action which is logo therapy. The study aims to determine whether there is influence of logo therapy on meaningful life of elderly stroke in Padalarang District in 2017.

The research used Quasi Experimental Design with the Nonequivalent Control Group Design. The population is 46 elderly stroke in Padalarang district. The average research result before and after given logotherapy is 7.20 and 13.90 respectively. The result of statistical tests concluded that there is influence of Logo Therapy on meaningfulness of Life in elderly stroke in Padalarang District with P value 0.0001 <α (0,05).

It is recommended for District Health Office of West Bandung requires effort in improving health status of elderly by increasing meaningfulness of life. It can be done by holding a routine posbindu, giving health education about logo therapy to the elderly.

Key words: Logo therapy, meaningfulness of life, elderly, stroke,

Introduction

The elderly is a closing period in the life span of a person, there will be a natural aging processes and changes in various aspects including biological, psychological, social and cognitive aspects (Ebersole & Hess, 2010). These changes of the elderly tend to be more susceptible to cardiovascular diseases such as heart failure, coronary heart disease, and stroke (Setiawan, et al, 2013). West Java is the one of the top 10 provinces with the highest percentage of stroke. Data of Ministry of Health RI (2015) mentions that the prevalence of Stroke in West Java is 7.4% and made Stroke prevalence based on age group in West Java including aged group 15-24 years (2,6%), age group 25-34 year (3.9%), age group 35-44 years (6.4%), age group 45-54 years (16.6%), age group 55-64 years (33%), age group 65-74 year (46.1%), and age group> 75 years (67.8%) (Ministry of Health, 2014).

Stroke patients have physical limitations of lack of self-acceptance which leads to feeling of alienation. If self-acceptance is lacking in the elderly, the retrospective glances will reveal a picture of the life that has been passed. As the result, the elderly usually regrets what was happened and assuming helpless, useless and meaningless of life. According to Havirghust (1982), one of the development task of elderly is to find the meaning of life (Suardiman, 2010). The meaning of life is a concept with full of subjectivity, therefore every human being must try to get the meaning of his life. Without any attempt to find meaning in every episode of life, humans will lose their best potential (Asmadina, 2007).

A person who has discovered the meaning of life will be responsible for directing his life, having an optimistic attitude, still existing, and being able to recognize the potentials and shortcomings (Lu et al, 2010). Likewise, an elderly person who has meaningfulness of life will be able to solve his life problems by remaining existent and optimistic as well as the opportunity to realize the desire through activities that provide life satisfaction and freedom to create creativity according to interests and abilities (Ebersole & Hess, 2010).

Elderly, who have psychosocial problems in society, require nursing action to overcome elderly problem. This is in line with the policy on Community Based Geriatric Health including health
counseling, self-reliance and community empowerment, family and community roles, partnerships with NGOs and the private sector (Ministry of Health, 2011).

Therapy that nurses can do to resolve the problem of negative perceptions about the effects of disease and treatment is to do logo therapy on individuals. Logo therapy is an existential psychotherapy that focuses on awareness of the meaning of life as a way to achieve mental health (Simpson & Weiner, 1989). The purpose of this study is to see the existence of the influence of Logo therapy on meaningfulness of elderly life with Stroke in Padalarang District in 2017.

Method

The method used in this research is Quasi Experimental design which is Nonequivalent Control Group Design. The purposive sampling is chosen in this research using 20 people with the distribution of 10 people control group and 10 people intervention group. Meaning in Life Questioners (MLQ) is used as Data collection techniques in this study. Univariate analysis is used to obtain a description of each variable and dependent t test.

Results

<table>
<thead>
<tr>
<th>Variabel</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning of Pretest</td>
<td>10</td>
<td>7.20</td>
<td>1,135</td>
<td>0,359</td>
<td>0.0001</td>
</tr>
<tr>
<td>Mean of Posttest</td>
<td>10</td>
<td>13,90</td>
<td>2,132</td>
<td>0,674</td>
<td></td>
</tr>
</tbody>
</table>

The result of analysis in table obtained the significance of elderly life before intervention is 7.20 with standard deviation 1,135, while after intervention is 10.70 with standard deviation 2,214. As the result, it is concluded that there is influence of Logo Therapy on the meaning of life in elderly with stroke in Padalarang District with the result of dependent T-test with p value 0.0001; P value <α (0.05) which means Ha failed and to be rejected.

Discussion

There are some negative emotional reactions experienced by patients with paralysis pasca stroke, such as sadness and prolonged depressed that can cause meaningless of life appreciation which lead to depression. Patients suffered stroke can experience of living meaningless life. Most stroke sufferers experience a meaningless of life before being given therapy, this can be due to individual elderly factors which do not understand or do not want to find out what really happened to them, and what they can do.

Meaningless life of people with stroke can be caused by the family that does not want to understand and feel disturbed by chronic illness disease. Families often show an attitude of not accepting patient’s condition. Furthermore, the family often gives a verdict that people with stroke will die, therefore, they have no spirit to take care and solve the problems (Tugasworo, 2007). If the elderly cannot find the meaning of life because of a suffering, they are no longer passion to live and achieve life satisfaction in the remaining life time.

The average meaningfulness of elderly life with stroke increases after being given intervention Logo Therapy because its can bring up high motivation. As the result, elderly can train and improve ability in activities. The meaning of life and meaningful life can be attained through the work of benevolence and virtue for others, believing in, and living the beauty, wisdom and love, and taking the right attitude to the inevitable suffering (Bastaman, 2007). Physical and psychological interventions are required to be given to elderly stroke in order to develop their ability and believe meaningful of life by using this Logo Therapy.
There are influence of Logo Therapy on meaningfulness of life elderly stroke because the therapy can be used as the stage of search and the realization of the meaning of life for the elderly. Logo Therapy is a directed activity that will change to attitudes and interests of the elderly due to stroke. Also, family is involved in the implementation, therefore, the elderly can feel the existence of social support from the environment, especially the family. According to Bastaman (2007), there are several components that can determine the success of the meaning of life, such as directed activities with efforts made consciously and deliberately including personal potential development, talents, abilities, positive skills and the utilization of interpersonal relationships to support meaning and purpose of life.

Bastaman (2007) argues that tasks and daily work are a source of satisfaction and pleasure for each individual; therefore, they do with eager and responsible. As a consequently, they will be able to adapt and aware of environmental restrictions, but within this limitation, they can still determine what they do best and realize the meaning of life which can be found in life itself.

Conclusion
1. The average value of meaningfulness of life before the intervention is 7.20 which implies the meaningless life of the elderly
2. There is an increase of meaningful life of elderly post stroke after being given 4 times the Logo Therapy intervention. This is based on the increase in the mean value (13.90) of meaningfulness life after the intervention that means the sufficient meaningfulness of elderly life.
3. The influence of Logo Therapy on the meaning of life for elderly with stroke in Padalarang District with 0.0001 of P value <\(\alpha\) (0,05) which means Ha failed and to be rejected.

References


Nursery Model Implementation Based on Culture in the Effort of Handling Hypertension Disease in Sukabumi Regency

1Hendri Hadiyanto*, 2Tuah Nur
1Nursery Department  Muhammadiyah University of Sukabumi
2 Faculty of Administration Sciences and Humanities Muhammadiyah University of Sukabumi
Email: hadiyantohendri@yahoo.co.id

Abstract

The death risk is caused by high hypertension because of handling hypertension, which has no good treatment. Hypertension is a hidden disease that can endanger human life if it is not immediately handled because the disease can be detected if it is examined. Culture and life style factor have influence on to hypertension, particularly food that is not controlled by avoiding health aspect such as, food contains high salt, obesity, etc. Seeing from the total annual case that is increasing. This increasing case needs a model that can be used to prevent hypertension disease as nursery model based on culture. Culture approach in society is suitable to change life behaviour, which is not health. The research aims to identify the cause of hypertension increasing in Sukabumi regency and the effort has been done in handling hypertension disease. The result shows habit pattern of hypertension victim in Sukabumi regency is caused by culture or habit that does not support to health. It is caused by habit from generation to generation especially the habit of Sundanese society that consumes salted fish and salt. Sundanese society in Sukabumi regency thinks that having rice without salt is not delicious.

Key words: Nursery model based on culture, hypertension

Introduction

Based on statistic, advanced age (2015) shows that woman advanced age about 8,96% and man advanced age about 7,91% from the total of Indonesian population. The data shows needs a special attention for advanced age. They have to be healthy and productive. One of the diseases in advanced age is hypertension. Hypertension can be defined as a persistent blood pressure when a pressure in the level of 140 mmHg and 90 mmHg. In advanced age population, hypertension is defined as a pressure when a pressure in the level 160 mmHg and 90 mmHg (Brunner & Suddarth, 2002: 896).

Hypertension case in Indonesia is quite high but there is no maximal and general research. It is only small research that spread every where. Soenardi and Soetardjo (2000:4) concluded from some researches were only 1,8-28,6%, the people in the level of 20 years have hypertension. The data report from Basic Research Health (2007) mentioned province with the highest hypertension victim 53,3 percent is Natuna Island. Meanwhile the last position in 6,8 percent is West Papua Province.

Food management to prevent hypertension is still agrued by many people. Controversy is especially in consuming food in high natron (Na) can cause hypertension and limiting consumption can cause hypertension. In Indonesia, on General Guidance of Balance Nutrition (GGBN) mentions that it must decrease salt consumption (Soenardi Tuti, 2005: 7).

The influence of salt consumption to hypertension occurs through the raising of plasma volume, heartbeat, and blood pressure increasing. In normal, such case will be followed by salt releasing so that it will be back to haemodynamic. Yet, on hypertension victim such mechanism is disturbed. Besides, there is other factor which has influence on so far as blood pressure is increasing (MacGregor, GA, 2009).

Society in Indonesia and Asia is generally consuming high natron because they use to consume ketchup, seasoning MSG (Monosodium glutamate) in large number of quantity. The salt consumption average is between 30 – 40 gram per day compares to American is only 6 – 18 gram per day (Soenardi Tuti, 2005: 6).

The people in Sukabumi regency majority are Sundanese, the habit in consuming food that contains salt with unknown salt concentration. The serving meal often serves salted fish and chili
sauce particularly in countryside area. The habit of smoking is also very high in Sukabumi regency area especially teenager, adult, and advanced age. Based on previous study that was conducted by Sukabumi Regency Health Department stated that hypertension is increasing every year. From the data in 2014, the total reached 13,036 people and in 2015 dramatically increased 31,034 people even the disease had attacked in the age of 15 – 24 in 2014 as many as 180 people and in 2015 as many as 488 people. The cause of hypertension increase was because of life style which did not concern to health such as, lack of exercise, irregular in consuming food, consume to much salt and calorie, smoking, and consume fast food. It shows that Sukabumi regency need a serious attention in decreasing hypertension.

One of nursery model that can be used to increase the effort in preventing hypertension disease in society is nursery model based on culture (Giger. J.J & Davidhizar. R.E,1995). According to the model, the approach used society culture approach relating to health behaviour in society. Nurse as health officer has an important role in the effort of preventing hypertension that is increasing in society. The model is convinced as one of nursery model that can be applied in society because of relating to culture and health behaviour which is able to prevent hypertension disease. Based on Aziz’s research (2014), nursery model based on culture had ever been applied in the case of bad nutrient that occured in Madura. The result of nursery model implementation based on culture in Madura society could increase a good child food pattern by family so that the case of bad nutrient decreased. Based on the background, the formulation study is how the cause of increasing hypertension victim in Sukabumi regency and the need of nursery model based on culture in the effort of handling hypertension diases in Sukabumi regency.

Method
Research design applied descriptive research qualitative survey and qualitatif (Arikunto, 2002). Quantitative research is needed to obtain characteristic data of hypertension victim in Sukabumi regency. Qualitative research is needed to find how far the cause of hypertension increasing in Sukabumi regency and what effort that had been done to handle hypertension disease. Sampling technique applied stratified random sampling method. The criteria respondent sample were medium age between 35 to 45 year and advanced age between 46 to 65 year and > 65 year. Sample in this research was taken from 102 respondents of hypertension victim from six areas of local government clinic that become a research place. There are among other: Jam pang Kulon, Surade, Jampang Tengah, Cikembar, Sukaraja and Cireunghas.

Result and Discussion
The characteristic of hypertension victim in Sukabumi regency in the range of 46 to 55 year as much as 28,45%. Based on sex, it is more men than women as much as 56,9%. Based on elementary school level, it is more 51 % and based on occupation, farmer is more than 35,3%. Knowledge factor of hypertension care is very important because of avoiding complication in hypertension disease especially hypertension that is caused by life sytle of unhealthy life factor. Based on research, hypertension victim in Sukabumi regency who knows hypertension disease information is quite high as many as 56,9% and who does not know the effect of hypertension disease as many as 61,8%.

Emitasari, et.al (2008) stated that people who seldom consumes vegetables has a risky 1,17 will get hypertension and people who seldom consume fruits has a risky 1,89 times will get hypertension. The habit pattern of hypertension victim in Sukabumi regency has a habit to consume vegetable as many as 26,5 % and has no a habit to consume fruits as many as 73,5%. The habit pattern of hypertension victim in Sukabumi regency has a habit to consume vegetable as many as 60,8% and has no habit to consume vegetable as many as 39,2%. Emitasari, et.al (2008) concluded that the pattern consumption of salted food such as salt, MSG, ketchup, sauce have a risky 5,76 will get hypertension. The pattern habit of hypertension victim in Sukabumi regency has a habit to consume salted fish as many as 19,6%. The victim hypertension also has a habit to consume delicious food with flavour seasoning as many as 78,4% and who has no habit to consume as many as 21,6%.

A negative emotion is often related to increase blood pressure. A research shows that a high angry intensity and press angry expression increase a risky for hypertension (Markovutz, 1993). The victim hypertension in Sukabumi regency has get angry easy (emotional) as many as 77,5% and on the contrary has no get angry easy (emotional) as many as 22,5%. Exercise also relates to hypertension. Regular exercise can decrease stress, decrease obesity, burn fat, and strengthen heart muscle so that it will decrease a risk of hypertension (Sustrani, 2005).
The pattern habit of hypertension victim in Sukabumi regency has exercise habit at least once in a week as many as 14.7% and has no exercise habit as many as 85.3%. Smoking can increase blood pressure eventhough in some researches are obtained a group of smoker have blood pressure lower than a group of non-smoker (Mansjoer, 2001). Chemical substance in cigarette such as nicotine and monoxide carbon that came into blood circulation can destroy endothelium surface of blood vessel artery and causes the process atelectasis and hypertension (Nurchalida, 2003). The pattern habit of hypertension victim in Sukabumi regency has smoking habit as many as 45.1% and on the contrary who has non-smoking habit as many as 54.9%.

The use of technology can be known that society is not completely use technology particularly who has hypertension history and most of them does not have tool to measure hypertension. Most of them use technology by coming diretly to local government clinic. The age of hypertension victim is an advanced age but it find hypertension victim under the age of 45 year. One of the cause is hereditary factor meanwhile the habit of consume food, society always use salt mixute. Culture in society, which has health advantage and health disadvantage to be known that most of them are accustoming to smoke especially family leader. Moreover health knowledge that has advantage particularly for hypertension that society has known the plants to help in curing hypertension and to change society bad habit is very difficult. Many ways are done persuasively. According to nurse in local government clinic, it needs a nursery model based on culture that can be implemented to handle hypertension disease in society because there is no nursery model in use.

**Conclusion**

The result research shows habit pattern of hypertension victim in Sukabumi regency is caused by culture or habit that does not support health life. It is because passing from generation to generation from parent’s behaviour especially the habit of Sundanese society who consumes salt fist and salt. Sundanese society in Sukabumi regency thinks that have rice without salt is not delicious.

**References**

Effectiveness of Development of Baby Swim in Cipageran Public Health Care Area Cimah

Dyna Apriany*, Sri Wulandari N
Nursing Departement Stikes Jenderal Achmad Yani Cimahi
* Email: d_apriany@yahoo.com

Abstract

The period of infants is the golden and critical period that requires early stimulation to optimize the development. Cimahi City, especially Cipageran health centre area with number of infant are 363 and those experience development disorders are 51 infant. The problem of development occure when there is an immediate threat of early stimulation. One of the development stimulations can be given is a baby swim. When swimming, every muscle in the body moves so that all muscles can developed rapidly and the brain will think to balance the body. This study aims to determine effectiveness of baby swim over infants development. The method used in this study is an observational analytic study with Research Quasy Experiment (two group Pre – post test design). A consecutive sampling is used with 32 infants as a control group and intervention group. Data collection for intervention group is done by providing a swimming intervention for infant aged 3-6 month, 3 times a week with 4 weeks with a duration of 15 minutes. The result of this research showed that there is a significant effect on development of baby swim in intervention group in comparison with control group after intervention (P value: 0.002). Baby swim can improve infant development. These finding suggest that Cipageran Health Centre is suggested to increase stimulation and conduct early detection of infants with developed intervention by baby swim, provide health education about it for the public society.

Key words : Baby, development, swim

Introduction

The number of infants in Indonesia 4,32,600 of 21,82,500 (20.05%) (Indonesian Ministry of Health, 2012). One of Indonesia that has a large enough percentage of children in West Java is Cimahi. The Cimahi city has infants at 52. 284 (Cimahi City Health Office, 2013). Public Health Care (Puskesmas) in Cimahi that have fairly large number of infants which are Puskesmas Cipageran. In this region in January 2014 recorded 1,412 infants of 9,365 toddlers. Based on data the number of babies in January, 2014, there were 51 infants who have developmental disorders including 11 gross motoric movement, 4 fine motoric movements, 4 observations disorder, 8 problem in active speaking, 14 socialization problem (PHC Cipageran, 2014).

Growth and development in infants, is inseparable from the concept of growth and development. Various factors can affect growth and development in children. Genetic factors such as gender and race can influence the growth and development of children. In addition, postnatal environmental factors such as culture (in this case is parenting), the position of the child in the family and the child receives the stimulation effect on child development (Kristiyanasari, 2010).

Infants who experience delays in the development of a baby will make parents feel anxious and worried that influence how parents meet the needs of the baby, as the mother who did not provide exercise of their infants hands and feet regularly at certain times. Lack of stimulation given to babies will worsen developmental delays in infants. Many research shows that infants need stimulation in various parts of the body and the senses to help the infants in the adjustment to the new environment (Hurlock, 2002).

Stimulation is a stimulus that is done since the newborn (even better since in the womb) do every day, to stimulate all the system senses (hearing, seeing, touching, smelling, tasting). One of the nursing interventions that stimulate the activity of formally sports games such as swimming.

Swimming is a sport that is the best for health care because while swimming almost all the muscles of the body moves so that all muscles can be developed rapidly and the strength continues growing. Swimming is a very valuable ability to be taught since early ages. At birth, a baby's brain has
little information about how to move around on the floor because the baby never had that experience. However, the baby already has information about how it feels to move in an aqueous environment. If the newborn does not use their natural abilities, may be lost. For this reason, it is vital that they have the opportunity to swim since the first days of life or as soon as possible. Provide an opportunity for the baby to move in the water is the ideal way to develop not only the body stronger but better brain. Swim from birth is very good for baby's health and development, early introduction would avoid them experience fear of water that can develop later on in childhood. Water helps improve coordination and balance. Various research on baby swimming has been done by Sigmundsson (2009) that found an increase in the motor development after the baby swim which improves motor development as well as to keep his balance. Teaching babies to swim since the first year from the age of 3-6 months in do 2 times a week to 7 weeks can improve self-confidence, intelligence of children, improve the child's appetite and a good night's sleep (Water Babies, 2012). Furthermore, impact of the baby pool is to have a balance and beneficial for future adult life. As the result, the benefits of baby swimming quite a lot, then it is very important to have a baby swimming as one intervention stimulation of development in infants.

Sensory and motoric activity of baby much better when the baby is often invited to swim by his parents. This is because, when the baby swimming the entire muscle will move and brain would think to balance the body. Benefits also cause babies to swim more easily receive a response from the surrounding environment and easier to learn how to crawl and walk because they are accustomed to moving his hands and feet (Widodo, 2012).

Based on preliminary studies in Puskesmas Cipageran on 10 March 2014 at KIA (Health Mother and Children Room) found that mother with babies aged 1-11 months, were 11 mothers said that the baby's mother was not aware of any baby swimming and benefits. In addition, the Mother was afraid to teach swimming in babies and knows that Swimming only given to ages from 3 years and also the lack of support facilities for teaching swimming baby. The results of the initial survey found 10 infants in Puskesmas Cipageran developmental delay of soft and hard motoric with screening using Pre-Screening Questionnaire Development (KPSP). Unfortunately, the fear of parents teach babies to swim because fear of drowning, child's foot sprain, sprains, influenza and fever. Benefits of swimming can improve infant development such as gross and soft motoric development and help improve coordination and balance to train the muscles of the baby.

Method

Genetic factors such as gender and race can influence the growth and development of children. In addition, postnatal environmental factors such as culture (in this case is parenting), the position of the child in the family and the child receives the stimulation effect on child development (Kristiyanasari, 2010). Stimulation is a stimulus that is done since the newborn (even better since in the womb) do every day, to stimulate all the system senses (hearing, seeing, touching, smelling, tasting). One of the nursing interventions that stimulate the activity of sports games formally such as swimming.

Swimming is a sport that is best for health care because while swimming almost all the muscles of the body moves. Therefore, all muscles can be developed rapidly and the strength continues incrisingly. This research is a study Quasi Experimental approach to non randomized pretest-posttest design to know influence of swimming on the development of gross and soft motoric, language and social personal by comparing the baby before treated (pre) and after given treatment (post) in the group control and intervention groups.

The population in this study were infants aged 3-6 months with 363 babies in Puskesmas Cipageran Cimahi in February 2014. The sampling in this research is using purposive sample with 16 respondents to the control group and intervention. In this study, the instruments used to measure the baby's development using a measuring instrument KPSP development (Pre-Screening Questionnaire Development). The independent variables in this study is the development of the baby and the dependent variable is swimming.

Data collection techniques is to measures of infant development with pretest using sheet KPSP in Posyandu (Integrated health care for Babies) and let the baby in swimming for 15 minutes and swimming 3 times a week until week 4. Then re-measure progress using KPSP. For a control group of interventions for swimming is done after the completion of the development of post-test measurements.

Data analysis used T-Independent. Before performing the bivariate analysis, firstly researchers to test the normality of the data with the data distribution Skewness values that obtained before swimming
is $0.812 / 0.637 = 1.274$ and after swimming is $0.388 / 0.637 = 0.609$. The result of two variables are less than 2 meaning normal distribution. As a result, It can conclude bivariate analysis using a paired test.

Results
Univariat analysis

a. characteristics of Respondents

1) Characteristics of respondents’ gender

Table 1 Distribution of Respondents by Gender in Puskesmas Cipageran 2016 (n = 32)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Control Frek (%)</th>
<th>Intervensi Frek (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>12 (75%)</td>
<td>10 (63%)</td>
<td>22 (69%)</td>
</tr>
<tr>
<td>Male</td>
<td>4 (25%)</td>
<td>6 (37%)</td>
<td>10 (31%)</td>
</tr>
<tr>
<td>Total</td>
<td>16 (100%)</td>
<td>16 (100%)</td>
<td>32 (100%)</td>
</tr>
</tbody>
</table>

According to the table 1 is known that some of the respondents in the control group (75%) and the intervention group (63%) were female.

2) Outstanding characteristics Children in Families

Table 2 Distribution of respondents according to the position of children in the family health center area Cipageran 2016 (n = 32)

<table>
<thead>
<tr>
<th>Position of Children</th>
<th>Kontrol Frek (%)</th>
<th>Intervensi Frek (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>3 (19%)</td>
<td>5 (31%)</td>
<td>8 (25%)</td>
</tr>
<tr>
<td>Second</td>
<td>7 (44%)</td>
<td>4 (25%)</td>
<td>11 (34%)</td>
</tr>
<tr>
<td>&gt;3</td>
<td>6 (37%)</td>
<td>7 (44%)</td>
<td>13 (41%)</td>
</tr>
<tr>
<td>Total Amount</td>
<td>16 (100%)</td>
<td>16 (100%)</td>
<td>32 (100%)</td>
</tr>
</tbody>
</table>

According to the table 2 is known in the intervention group almost half of the respondents > 3 of 7 respondents (44%) to the position of children in the family, the whereas the control group almost half of the respondents is the second child of 7 respondents (44%) the position of children in the family.

3) On the development of the baby before the intervention given pool in the control group and the intervention group

Table 3 Respondents Prior Developments in Regional Health Center Cipageran In the control group and intervention group in 2016 (n = 32)

<table>
<thead>
<tr>
<th>Values infant development</th>
<th>Group</th>
<th>Total</th>
<th>Persentase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>Control</td>
<td>4</td>
<td>25%</td>
</tr>
<tr>
<td>Question</td>
<td></td>
<td>7</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>31%</td>
</tr>
</tbody>
</table>
Based on Table 3 is known that almost half of the respondents in the control group had developmental doubts before given intervention (pre-test) as many as seven infants (44%), while the intervention group found that almost half of respondents have appropriate development and doubted as six babies (37.5%) respectively before being given swimming intervention.

4) On the development of babies given intervention after swimming in the control group and the intervention group.

**Table 4 Development of Respondents after given swimming interventions in Puskesmas Cipageran for control group and intervention group in 2016 (n = 32)**

<table>
<thead>
<tr>
<th>Values infant development</th>
<th>Group</th>
<th>Total</th>
<th>Percentase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>Control</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>Question</td>
<td></td>
<td>4</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>44%</td>
</tr>
<tr>
<td>Possible Deviations</td>
<td>Intervention</td>
<td>12</td>
<td>75%</td>
</tr>
<tr>
<td>Appropriate</td>
<td></td>
<td>12</td>
<td>75%</td>
</tr>
<tr>
<td>Question</td>
<td></td>
<td>2</td>
<td>12,5%</td>
</tr>
<tr>
<td>Possible cause</td>
<td></td>
<td>2</td>
<td>12,5%</td>
</tr>
<tr>
<td>Total amount</td>
<td></td>
<td>32</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on table 4 is known that almost half of the respondents in the control group had a development possible deviations seven infants (44%) after the given intervention (Post-test), while the intervention group the majority of respondents have appropriate development at 12 infants (75%) after given the intervention of swimming.

**Analisa Bivariat**

a. Developmental differences before and after the baby swimming given intervention in the control group and the intervention group.

**Table 5 Differences Developments Before and After Baby swim In the control group and intervention group in PHC Cipageran 2016**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Measurement</th>
<th>median</th>
<th>SD</th>
<th>P. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>Intervention</td>
<td>Before</td>
<td>0,625</td>
<td>0,281</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>After</td>
<td>0,937</td>
<td>0,472</td>
<td>0,002</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>Before</td>
<td>0,836</td>
<td>0,410</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>After</td>
<td>0,678</td>
<td>0,292</td>
<td></td>
</tr>
</tbody>
</table>

Based on the Table 5 shows that the average value of differences in intervention group before and after the intervention has risen by 0.312 primary difference is 0.191. While the average value of the Control group differences before and after intervention decreased by 0.158 with difference of SD.
was 0.118. Statistical analysis showed that $P$ value $= 0.002$ means that $H_0$ refused and $H_a$ accepted. These results suggest that there are statistically significant effect in giving a baby swim in the intervention group and the control group.

Discussion

1. Characteristics of respondents' gender and position of the child in the family

In this study, the percentage of respondents' gender in the control group, most (75%) were female and the intervention group the majority (63%) were female. The intervention group almost half of the respondents to the position of children in the family, the daughter of > 3 of 7 respondents (44%), whereas the control group almost half of the respondents to the position of children in the family that is the second child of 7 respondents (44%). Based on the observations during the study, most mothers aged late and already have at least two children.

Based on the above data, the female sex with the child's position to> 3 and the second child more likely to have developmental disorders. Judarwanto and Dwi (2012) mentions that girls at age middle childhood 5% -10% physical flexibility better than boys, but to the physical abilities such as running, jumping and throwing are included gross motoric development of boys better than girls. IDAI (2005) study found that boys at the age of 0-13 years ahead in growth because boys have appropriate hormone balance at that age, while females have a fast time in the growth at the age of 10-19 years. Besides his lack of attention, affection and his lack of oversight of the development of her baby given by parents.

In addition, research conducted by Nirvana (2011) states that the status of children in the family has an important role in the development. If the baby is the only child, the parents will tend to give 100% attention to the child. However, if the child has a lot of relatives in the family, the children will be received less attention from parents. This is consistent with the fact that the field where the parents of the respondents said that the baby was less getting more attention because of the gap to close between the children.

2. Description of the development of the baby before the baby swim given intervention in the control group and the intervention

Giving stimulation at Posyandu Anggrek at Puskesmas Cipageran classified as less stimulation. It can be seen from the results of developmental assessment using KPSP shows the results of nearly half of the respondents in the control group 44% had doubtful development and 31% had a deviant development. In the intervention group while the results found that respondents nearly half had the appropriate development and doubtful. This is consistent with the fact of family situation, the knowledge of parents and respondents who did not support the environment. Stimulation is very important domain in shaping the development of a person, it is evident that the development based on the stimulation will be trained faster than on developments that are not based stimulation (Soedjatmiko, 2008).

Level education of parents is an important factor in the development of the child because Parents who has better education, can receive any information from the outside, especially about good parenting, how to keep their children’s health, education and so forth. The numbers of children also affect the mother’s ability to provide stimulation due to the experience gained in previous child. Sometimes, mothers, who have many children, already provide a good stimulation to their children but the development of children showing categories of possible deviations. In addition, family with low socio-economic and many children will result in the lack of affection and attention in children and less primary needs such as food, clothing and housing. Nursalam (2005) suggests that the pattern of child development between children is not always the same because it is influenced interactions for a number of factors for examples genetic and hormonal and environmental factors including factors prenatal, birth and postnatal period as well as the factors parents.

Research conducted that stimulation is a stimulant that comes from outside. Stimulation is very important in growth and development. Infants with a lot of stimulation directed and earlier will grow faster than babies who are less or even not stimulated. Stimulation can also function as supporting for infant development. Also, attention and affection are an important stimulus in early development for example by inviting conversation, caressing, kissing, playing, and others. This is supported by Siswono (2004), early stimulation and continuously will support aspects of development such as intelligence (multiple intelligences) including logic-mathematical, emotional, communication language (linguistic), musical intelligence, movement (kinesthetic), visualo-spatial and visual art. Stimulus that can be done for infants to enhance and
stimulate its development is baby swim.

3. Overview development of the baby after the baby swim given intervention in the control group and the intervention

   There are changes developments in both the control group and intervention. For the control group decreased infant development that originally the irregularities amount 5 respondents then without intervention baby swim at 7 respondends. In the intervention group before the intervention given the number of respondents who experienced doubt and distorted development is 10 respondents then decreased to 4 respondent after giving intervention: baby swim. Based on the fact, the results seen an increase in the value of developments in the intervention group initially be appropriate as much as 37.5% to 75% after baby swim. By the time, the baby that is put in the water is crying and look fear of new things but after the routine appears to feel at ease and comfortable with the situation in the water.

   This is consistent with the statement that says that newborn babies up to age 6 months can be directly invited to swim comfortably into the water without fear of drowning. Because at that age, babies have a reflex move that many potential uses for swimming. Stepping reflex is a reflex that accompanies babies as well as grasping reflex and walking reflex (Karel staa, 2012).

   In accordance with the process of physiological adaptation that occurs when the pool is the stimulation given to babies mechanism nervous system receptors that work is divided into three: the first sensory input, there are receptors of somatic and visceral receptors. The second output of the motor is to get input from the brain to the spinal cord and then respond from the muscles and glands in the body. The third activity occurs integrity of electrical impulses to the brain brought up in the spinal cord and spinal nerves is brought to the cranial nerves are protected in bone cranium and vertebral canal divided into 2 of the efferent nerves to sensory and motor efferent nerves. For sensory efferent nerves, transmission of information to the central nervous, while for direct motor efferent nerves to the central nervous system and then forwarded to the muscles and glands. While the brain works is divided into two, namely the cerebellum which serves to move the muscles of the body balance and muscle functioning cerebrum great for intelligence and personality (Boyke, 2012).

   In addition, the ability of the baby in the water seen that with floats, moving the hands to grab toys and move the legs that were previously the position of the baby's legs bend in the water. This is consistent with the statement by Domen (2006) states that the baby is accustomed to being in the water before the baby is born, her life began early the baby is able to float and move his legs to be able to maintain his body in the water.

4. The difference in the development of the respondents before and after the baby swim.

   Statistical analysis showed the P value of 0.002 means that there is an influence on the development of swimming in the control group and intervention. The results mean in the intervention group increased, while the control group decreased. This means that the development of the respondents in the intervention group after being given baby swim progressing in accordance with the child's age. This can be due to one baby swimming techniques can easily move his whole body, especially the neck and head, which were disputed by neckring so that the baby's head freed by water and is able to strengthen the muscles so as to improve gross motoric development. Moreover, gross motor development is strongly influenced by the organs and functions of the central nervous system and brain. Central nervous system plays an important role in motor skills and coordinate every movement made by the baby. The more mature brain nerve system that regulates muscle allows development and competence or motoric abilities.

   The results showed respondents prior to the baby swim was found respondents could not move his head from right / left to the middle and can not move her head from side to the other side. After swimming, there is increased development because respondents are able to perform tasks that were previously not able to progress made by the respondents including moving his head from right / left to center and from one side to the other.

   This fact made possible because of the baby's head can move to stimulate the coordination of the small muscles that respondents can move his head from right / left to center. This fact reinforced the opinion Judarwanto (2012) which states that the baby swim has many benefits including increased emotional relationship between parent and baby, therefore, it can stimulate the growth of social personal and besides the movement of the head from one side to the other side serves to strengthen babies' muscles. Furthermore, it can stimulate soft motoric development.
According to Thomson (2007) says that infants aged 2 days already able to swim well. The first year of baby's life is crucial, especially in its development. By baby swim regularly participated had a big hand in supporting growth. Water allows the muscles’s baby to move freely. Other studies found that infants aged 2 months taught to swim more easily than adults, because at the ages ranging from 9 months infants already recognize the danger and fear.

Water helps improve coordination and balance. The lack of gravity means that the baby train of muscles more effective in the water than on land. A German study found that infants swim has advanced motor development, social skills and intelligence. A similar study in Finland showed that baby swim has crawl late but walking earlier after well developed muscle control.

The research found that after the infant baby swim parents say that the baby looks so calm, no fuss, slept soundly and increased intake of milk than before. This is in accordance with Judarwanto (2012) said that one of the benefits of baby swimming is to improve the bonding of children to parents, the baby relax and improve baby's appetite. In addition, it is proved in research that was launched in London in 1998. This study showed that babies sleep a lot, would be optimal brain development. Also, Research from Queenslands, Australia, revealed that the baby swim not only affects the child's physical condition but also improve the performance of a child's brain that makes it more intelligent (Schoefer Y, et al, 2007).

Conclusion

There are differences in intervention group before and after the intervention has risen by 0.312 primary difference SD 0.191. While the average value of the Control group differences before and after intervention decreased by 0.158 with SD difference 0.118. Statistical analysis showed the \( P \) value = 0.002 means that Ho refused and Ha accepted. These results suggest that there are statistically significant effect in giving a baby swim in the intervention group and the control group.

Acknowledgement

This research was funded by the Ministry of Research and Higher Education of the Republic of Indonesia and supported by the City Health Department and Community Health Center Cipageran Cimahi.

References

The Influences of Auditory-Visual Stimulation toward the Low Birth Weight Infant Growth

Dwi Hastuti*, Siti Nurbayanti
1, 2 Nursing Departement Stikes Jenderal Achmad Yani Cimahi
Email: dwi.hastuti@gmail.com

Abstract

The low birth weight infant (LBWI) is the main factor in the increasing of mortality, morbidity, and neonates diability rate of infants and children, it contributes in long term to their future life. If LBWI did not manage well, it could cause problem on all body organ such as on respiratory system disorder, mental and physics and children growth (Health Dept of RI, 2005). The implementation of auditory-visual stimulation on low birth weight infants influenced the functional korical mature of infants growt. The research aimed to identify the influences of auditory-visual stimulation toward the low birth weight infant’s growth at Soreang Regional Public Hospital. This research used quasy-experimental design, onegroupPre-test and post test design 17 infants who had LBW had been taken by sampling purposive technique. Auditory visual intervention was implemented one time in 5 days. The observation sheets and visual auditory stimulation procedure were used as research instruments. The data were analized by using Wilcoxon test. Data analysis result showed that LBWI growth before given visual auditory was into category of hiden behavior; LBWI growth after given visual auditory stimulation was into category of closing behavior growth; and there was the comparative clearly between infant growth before given the visual auditory stimulation with infant growth after given visual auditory stimulation with p value 0.000. Nurse and family are hoped to be able to give auditory visual stimulation directly both as long as infants were cared at hospital or at home, because this intervention is able to increase infant growth who had LBW. Besides that, to achieve the infant growth result. Besides that to achieve infant growth optimally is hoped maternal is able to give breastfeeding nutrient to infant optimally.

Key words: Auditori-visual, LBWI, Stimulasion

Introduction

In Bandung regency based on report in 2012, the amount of neonatal mortality rate were 276 cases whichas main factor was caused by LBWIs many as92 (33.3%). Infant with LBWlexperience is in mortality elevated risk at labor stage. Its High mortality onLBWI case can be caused by the emergency management service quality and less care management (Health Dept, 2012). LBWI is one of main factor in increasing of mortality, morbidity and neonatusdiability, infant and children can make the future impact in long term toward their life in the future. If LBWI did not manage well, it could cause problem on all body organ such as on respiratory system disorder, blind, deaf, mental and physics and children growth (Health Dept of RI, 2005). LBWI needs properly care to prevent it from problems especially on infant growth. Infants are critical period where it is specific time when a event is given or if it’s none of its condition, it can make big problem effect toward the growth. In this period, the brain has the growth rapidly and it is the period where the brain is very sensitive to accept or adapt with its environment. Implementing of auditori-visual stimulation can increase infant growth showed brain plasticity. Much ability can be increased significantly by exercise, in this case by implementing the auditory-visual stimulation. In ferrerato article review, domellof, and Ronngvist (2014) about pre-effect of auditory stimulation toward neonates growth stated that pre-effect stimulation can increase infants’ growth which can be seen from motoric activities, physiology balancing, and it shows the infants ability to adapt well. The other research was informed that the implementing of auditory visual stimulation onLBWI influenced functional cortical mature during infants growth (Chipaux, M. et.al., 2013). Nurse is apart of service provider who have an important role in providing the care onLBWI. To increase LBWI growth care, nursing care must be planned according to the needs to strengthen the physical growth, physico-sosial, and optimal neurological, one of it by doing growth intervensi with implementing of auditory and visual stimulation. The
research aimed to identify the effects of implementing of auditory-visual stimulation intervention. Toward LBWIGrowth.

**Method**

Research method used quasy-experimental with one group Pre test and post test design. The research population is LBW infants hospitalized at perinatology ward in sorengRSUD with purposive sampling method which taken based on criteria such as, (1)Newborn infant > 1500 gram to < 2500gram, (2) infant has no congential disorder (3) infants has no oxygen therapy. The number of calculation research sample areas were 17 infants.Any subject which meet the criteria of inclusion of researchers directly asked inform consent and do the data collection process by means of assess behavior LWBI first day care (PRE) and the 6th century care (POST) after the infants get stimulation auditory visual good 5 days with duration stimulation eight minutes.Instrument data collection research with sheets of observation to seeing the development of LWBI viewed from behavior LWBI according toLissauer &Faranoff in 2008; Boston, 1986 in Wong, Hockenberry-Eaton, Wilson, Winkelstein &Schwartz in 2008 and the instrument procedure stimulation auditory-visual, adopted according to Soedjatmiko,(2006); Wong, Hockenberry-Eaton, Wilson, Winkelstein & Schwartz in 2008. The analysis used to research it uses Wilcoxon test.

**Results**

Research carried out on 10 may 2016 up to 24 august 2016 done shaping data to get some sample of these results as follows,

a. **The description of LBWI growth before auditory visual stimulation intervention.**

To find out the average value of a development intervention prior to LOW BIRTH WEIGHT infants were shown in the following table:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>S.d</th>
<th>Minimal-Maximal</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBWI Growth</td>
<td>2.76</td>
<td>3.00</td>
<td>0.75</td>
<td>2 - 4</td>
<td>2.38 – 3.15</td>
</tr>
</tbody>
</table>

From the analysis was obtained the LBWI average 2.76 development, median 3.00 (95 % CI: 2.38-3.15) with standard deviations 0.75. The lowest 2 growth and the highest growth 4. From the estimated interval 95 % was believed that the LBWI growth before done intervention of 2.38 to 3.15.

b. **The description of LWBI growth after auditory visual stimulation intervention.**

To know the infants growth of LWBI average through intervention listed in the table following:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>S.d</th>
<th>Minimal-Maximal</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWBI growth</td>
<td>4.82</td>
<td>5.00</td>
<td>0.393</td>
<td>4 - 5</td>
<td>4.62 – 5.03</td>
</tr>
</tbody>
</table>

From the analysis results obtained development average 4.82 LBW, the median 5.00 (95 % CI: 4.62% u2013 5.03) with a standard deviation of 0.393. Development of low 4 and the highest development 5. Of the estimation interval 95% believed that the average development of LOW BIRTH WEIGHT prior to intervention between 4.62 up to 5.03.
c. The comparative of LWBI growth before and after implementing of auditory visual stimulation.
To know comparative LWBI growth before and after being implemented intervention which sown in table as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean Rank</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWBI growth before</td>
<td>17</td>
<td>0,00</td>
<td>0,000</td>
</tr>
<tr>
<td>LWBI growth after</td>
<td></td>
<td>9,00</td>
<td></td>
</tr>
</tbody>
</table>

From the analysis obtained that mean rank the infant’s growth before intervention is 0,00, while after the intervention means rank-nya is 9,00. Test scores of statistic was obtained p value = 0,000, that means that alpha 5 % are apparently significant differences the development of a infant before intervention by after intervention

Discussion
LWBI is an infant that is born with a weight < 2500 grams (papalia, olds, &feldman ( 2013 ). Consequence of LWBI although were almost all infants with low birth weight normal and healthy, as a group they have health problems and growth of that was bigger than that infants with weight born normal, the seriousness of this problem increasing in line to the decrease in body weight (Santrock, 2007). From the research before it was given a infant intervention auditory stimulation visual average were 2.76 LWBI the development, the growth of the lowest 2 and the highest development of the 4. Estimation of intervals 95 % believed to be that the average LWBI development prior to the intervention among 2.38 up to 3.15. The results of this research shows LWBI undergo growth the projected avoid behavior, where LWBI demonstrated the attitude of defensive or withdraw. It was because the LWBI to a process of adapting great related immature the physiological function of intraterine.

The results of research in accordance with the concept of the development of a baby by behavior lissauer &Faranoff (2008) where delivered that readiness to undergo the development can be measured either by observing behavior of infants. Sensitivity to behavior infant guidelines were the foundation of the development of care. Amendments to balance physiological, motoric activity, the level of vigilance and attention of infants by demonstrating ability to adapt to the situation. On LWBI’s behavior able to show what appeared to be a sign of unreadiness to interact and competence in manage on their own that look development on LWBI show avoid the behavior.

The other theory that supports also cited according to lissauer &Fanaroff (2009); Henderson &Macdonald (2005); Hockenberry, Wilson, Winkelstein &Kline (2003) where LWBI need a special treatment because they have problems that much on her body system for infant were not stable. LBWI included in a infant high risk, infant clinically has not shown obstacles the development of but potentially to undergo developmental disorders caused by the risk biomedi, the environment or socioeconomic phsyco-social. Risk factors are directly or indirectly can disrupt brain growth, disturbing the motion, communication, cognitive, emoti-sosial and behavior.

On an infant by weight born very low risk having high for have been affected in the development of nerve, become vulnerable to infectious disease, language disorder, and abnormalities of mannerisms (Adillida, maneroeng s, Lubis i . , 2003). This is shown by the results of research where almost all infants experienced problem in behavior where shown in spectroscopic observations behavior otonomic show the baby breathing irregularly, fast, and panting, pale, somewhat dark and stained; in spectroscopic observations motor behavior showing jerky movement and irregular, extension and the position of an average; in spectroscopic observations awareness of infants bed unsettled, confused and awareness that is not clearly; in spectroscopic observations attention baby looked edgy and too vigilant; and in spectroscopic observations setting oneself visible infant looked angry and blocking it.
The development of LWBI after the intervention stimulation auditory visual perinatologi in the hospital Soreang show the average of LWBI 4.82 development, the lowest the highest development of the 4 and 5. This shows that bblr having given intervention stimulation visual auditory baby undergo development good behavior, where infants projecting infant can show behavior that appeared to be the readiness to interact and competence in manage on their own (approaching) behavior, the baby had a stable state and mannerisms atensi regulations.

The result of this research according to the concept that is expressed from reference Bowden, Dickey & Greenberg, (1998), where delivered that infants were able to respond the voice of and able to discriminate the sounds his mother was in the voice of another person at the age of 12 hours after born. The development of sight had been formed at the end of pregnancy 28 weeks so at birth infant showed a response eyes start opening up, the pupil of response to light. Function visual at birth limited, but increases rapidly at the age of next at the same time as progress. The development of a power saw normal in infants indicated by acuteness of sight 20 / 300, looked nyagstam, aware of a stimulus visual at a distance 20 to 30 cm, the pupil of enlarged, and the lacrymal gland gets going. On condition bblr risky a possible delays in developments, that calls for a intervention stimulation to pursue progress. It is shown in the results of research in which the baby after given Auditory Visual stimulation intervention 8 minutes once in a day for 5 days the infant showed an increased development of normal behavior.

The other theories that supports the result of this research also cited in research Reynolds & Janzen, in 2007, where delivered that stimulation infants were intervention the development of on an infant by involving environment that would improve the development of perceptual, sensorimotor areas, kognitive, language and social emotional in infants. In Soedjatmiko, (2006) also expressed stimulation auditory is stimulation provided with gives support sound, while stimulation visual is stimulation provided with gives support eyes. This is proven the research where from the observation behavior otonomic show infant’s breathing regular and soft, blushes pink healthy; observations motoric infant showed the movement of smooth and varied, posture flexion and relaxes; observations awareness baby show baby bed quiet, vigilance quiet; observations attention baby show vigilance settled and focusing. And observations setting off a infant showed can care of themselves, and respond social.

Differences in the development of LWBI before and after the intervention stimulation auditory visual perinatologi ward in the hospital Soreang showed that mean rank the development of a infant before intervention is 0,00, while after the intervention mean rank-nya is 9,00. Test scores statistic obtained p = 0,000, that means that alpha 5 % was shown significant differences the development of a infant before intervention by after intervention. This shows there is a clear distinction between the development of LWBI behavior before it was given stimulation visual auditory with the development of behavior LWBI having given stimulation auditory visual. On LWBI having given stimulation infant showed the increase in accordance with their condition normal LWB, where the baby can adapt on the environment ekstrauterine well. The results of the study can answer the purpose of intervention stimulation auditory visual are (1) to improve regulary self infant, (2) facilitate relations of infant with the environment, and (3) to improve the development of behavior infant in general. In research Symington & Finelli (2002) said that stimulation external of auditory, visual having benefits in the form of an increase in behavior infants, ( Dieter & Emory, 1997; in Situmorang, 1f., 2010 ). There are several factors that can affect the development of infant namely the internal factor (genetic) and external factors (environment). Genetic factors a factor inborn, while environmental factor is a factor outside of individual infant that can be influence on the growth. Faktor. Consisting of the environment prenatal ward (when in mother uterine) and environment postnatal (when infant was born). Nutrition status, nutritional intake, exposure to teratogen, and stimulation is some examples environmental factors that can affect brain development of infants (Soedjatmiko, 2001).

On intervention given in the research is factor external environmental called with stimulations, stimulation there is derived from outside the environment individual that will affect development process. Infants who were stimulated regular and directed the process of development would have been better than not. The stimulation provided by the mother, father and the people closest to infants. The stimulation of sensory stimulation may be as an affective, visual, verbal, tactile stimulation, social, cognitive, and others. The granting of this stimulation will be more effective when tailored to the needs and the stage of its development (Soetjiningsih, 1995). Visual and auditory stimulation is beneficial in improving the accuracy of auditory-visual coordination in neonates.
The perception of baby knowledge will help babies learn about the environment so that the baby can adapt to the environment (Papalia, Old & Feldman, 2002).

Intervention stimulation showed plasticitas of brain the arrangement of nerves the ability to conform of change anatomy, the ability neurochemist, change metabolic. Stimulation is auditory early stimulation, visual given since early brain development, hoping to stimulate the quantity and quality of synapses cells of the brain, to optimize brain function (Soedjatmiko) 2006. This was consistent with the results where bblr given stimulation visual auditory shows the increase normal equity growth. This was confirmed by Indonesian dept of health (2006) where infants given stimulation acknowledge the process of development. The development of conduct for infants were the interaction ripeness the arrangement of nerves central government to organ being affected, so there extra structure and the functioning of the infants were more complex in the ability to speak, sociable and independence. The stimulation in infants in accordance with the condition. The purpose of any intervention was avoiding the stress. Intervention stimulation same the danger of excessive by deprivation excitative. If the condition of infants enough forward to start intervention development, some activities will be individualized directions, temperament, the state, the organization behavior, and special needs each of infants. The period intervening brief (e.g., 1-2 minutes excitative visual, 2-3 minutes excitative sound, or 5 minutes excitative music quiet be applied to the development of the responses can be shown to the infant become more stable and mannerisms attention (Wong Regulations, Hockenberry-Eaton, Wilson, Winkelstein, & Schwartz, 2008).

Recent research in the development of infant now focused on neurosains. At first, scientists think that brain development are determined genetically, and that their brains follow biological specified first. Now, scientists neurosains believe that the majority of of brain cells man formed before birth, but a connection between brain cells formed during childhood. This creates the belief that experiences first someone important to the development of the brain healthy. The outside world also play an important role in from an the baby brain, from the experience experienced infant’s senses, as sight, hearing, touch and of smell (Meggitt, 2013).

The result showed a baby given stimulation visual auditory shows that the both showed by the conduct near where the baby can adapt to normal. Yet there were 3 infants in the development of behavior its otonomic was still delayed shown the infants’ respiratory experienced irregular, fast, and hard breathing, pale, somewhat dark and stained. This could be affected by another factor external where besides on LWBI experienced immature function its physiology in pursuing of the process of adapting and development of infants also affected by nutrition one of them is breastfeeding. Breastfeeding is nutrition nourishment the ideal and meet all the needs of the nutritive or nutrition in infants. On condition this baby formula milk due to get the role of parents less well in its treatment. Developmental disorders at the infants may be reduced the quality of life. In delays in one aspect of can lead to delay also on the other. It can cause hampered or disruption of the process of growing flower (Ministry of finance in 2005). To reach the deadline LWBI development would be needed an intervention in nursing of independence stimulation. This involves the role of family and the quality of life are sprouting infant be achieved optimally.

References


Field, T.F. (2003). Stimulation of Preterm Infants. *Pediatrics in Review*, 24, 4-11. The online version of this article, along with updated information and services, is located on the World Wide Web at. Diperoleh tanggal 2 Januari 2014, dari [http://pedsinreview.aappublications.org/content/24/1/4](http://pedsinreview.aappublications.org/content/24/1/4).


Social Predisposing Factor of Schizophrenia at Kersamanah Subdistrict Garut District

Rahmi Imelisa
School of Health Sciences Jenderal Achmad Yani Cimahi, Cimahi City
Email: rahmiimelisa@ymail.com

Abstract

The prevalence of mental health disorder in Kersamanah Subdistrict is higher than the prevalence of West Java, it is 3.2/1000 person. The highest number of the disorder is schizophrenia. Schizophrenia could be predisposed by various factors. Social factors predispose schizophrenia include marital status, education level and the job. This research aim to indentify relation between social factors with schizophrenia in Kersamanah Subdistrict. This research used a case-control design with two group of sample, one group of schizophrenia client (106 respondent) as a case group and public citizens as a control group (106 respondent). This research showed that unmarried and widowed person has 12.107 times higher risk than the married person for schizophrenia. Lower educational level person has 3.863 times higher risk than higher educational level for schizophrenia, and jobless person has 2.297 times higher risk than the worked person for schizophrenia. It is suggested to the head of Mental Health Unit of Puskesmas Kersamanah to conduct several health education about marriage and the importance of higher educational level, and conduct a social-economical enhancement programs for schizophrenic clients. For example a simple job training, or make a cooperation with social organization to give a job or some goods for work.

Key words: Social factors, predisposition, schizophrenia

Introduction

World Health Organization (WHO) stated that schizophrenia is a mental disorder that affect approximately 7 of 1000 adult population, mostly at 15−35 years old. Although it has a low incident (3/10.000), it has a high prevalence considering it is a chronic disorder (WHO, 2012). For its prevalence, schizophrenia need a serious attention to resolve and for it’s prevention.

As a chronic disorder schizophrenia stay for years or forever with the client. And it make some obstacles in their daily activities such as schooling, working, having close friends, get married or having a child. People used to think that schizophrenia caused by severe stresses in live. In contradiction with Townsend (2009), who state that no scientific evidence proof that stress cause schizophrenia, but stress contribute to worsen this illness. Stress could precipitate the illness to individual with genetic vulnerability.

Schizophrenia caused by many factors. Stress-Adapta

tion Model of Stuart (2009) explain how every mental illness have two causa which is predisposing factors and precipitating stressors. Predisposing factors consist of biological factors, psychological factors dan social cultural factors. Biological factors include genetic background, nutritional status, biological sensitivity, general health condition, and toxic exposure. Psychological factors include intelligence, verbal skill, moral, personality, past experience, self-concept, motivation, psychological defense and locus of control. Social-cultural factors is age, gender, educational level, income, job, social position, cultural background, faith, political affiliation, sosial experience, and social integration level. Others expert state that schizophrenia caused by combination of several factors which is biological, psychological and environmental factors (Townsend, 2009)

Kersamanah Subdistrict is one of subdistrict at Garut District that have a higher prevalence of schizophrenia than the prevalence in West Java. Based on the medical record of the patients, this subdistrict have 120 schizophrenic client until Desember 2011 with number of citizen is 37.681 men
Based on data of citizen at 2011. It means that the prevalence of schizophrenia of this subdistrict is 3.2/1000. It is higher than the prevalence at West Java which is only 2.2/1000.

Based on pre research study to 10 schizophrenic client, the researcher found that 6 of 10 client have a family bound with other client. And 10 of 10 client did not have a job and a settled income. 10 of 10 client is a lower educational level person. The subdistrict officer said that the schizophrenic client is relatively high in that subdistrict because they did not have a proper income for they live. While others citizen add an opinion that the schizophrenic condition was related to poor spirituality.

Method

This research used a case control design with 2 groups of sample which is case group and control group. Case group is a group of schizophrenic client at Kersamanah subdistrict, that was count to 106 person from 120 person of mental health disorder (Based on medical record until Desember 2013), selected with purpossive sampling. And the control group is a group of public citizens, selected with clustered random sampling from every village at Kersamanah Subdistrict, and obtained as many as 106 person from 37,681 citizens of 6 village at Kersamanah Subdistrict.

For schizophrenia variable as dependent variable, data sources is from the nursing assesment that has been recorded in the patient medical record. And for the independent variables, the data measured with a questionnaire. The questionnaire filled based on nursing assesment on medical record. And for the control group, variables measured using questionnaire to the public citizens. This research had been conduct at June 2014. Data processed using a descriptive statistic for univariate and chi-square test for bivariate.

Results

Data analysis was conducted to describe relation of schizophrenia incidence and marital status, educational level and job status.

Schizophrenia and marital status

![Figure 1. Distribution of responden based on marital status](image)

Based on figure 1 we can conclude that most of responden from control group is married (89 of 106) and most of responden from case group is unmarried (74 of 106).

<table>
<thead>
<tr>
<th>Schizophrenia and marital status</th>
<th>Schizophrenia</th>
<th>Case</th>
<th>Total</th>
<th>P-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>83,9%</td>
<td>30,2%</td>
<td>57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>17</td>
<td>74</td>
<td>91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>106</td>
<td>212</td>
<td>0,000</td>
<td>12,107</td>
</tr>
</tbody>
</table>

| Total                           | 100%          | 100% | 100%  |         |    |
Based on table 1 we can conclude that marital status have a significant correlation with schizophrenia (p-value = 0.000). And we can conclude that an unmarried individual has 12.107 times higher risk than married person to suffer from schizophrenia.

**Figure 2. Distribution of responden based on educational level**

Based on figure 1 we can conclude that most of responden from control group have a higher educational level (80 of 106) and most of responden from case group have lower educational level (59 of 106).

**Table 2. Crosstab between schizophrenia and educational level**

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Schizophrenia</th>
<th>Total</th>
<th>P-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High level</td>
<td>80</td>
<td>47</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>75.5%</td>
<td>44.3%</td>
<td>59.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low level</td>
<td>26</td>
<td>59</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>24.5%</td>
<td>55.7%</td>
<td>40.1%</td>
<td>0.000</td>
<td>3.863</td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>106</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on table 1 we can conclude that educational level have a significant correlation with schizophrenia (p-value = 0.000). And we can conclude that individual with low level of educational has 3.863 times higher risk than individual with higher level educational to suffer from schizophrenia.
Based on figure 1 we can conclude that responden from control group is almost equal on job status and most of responden from case group is a jobless person (73 of 106).

**Table 3. Crosstab between schizophrenia and job status**

<table>
<thead>
<tr>
<th>Job status</th>
<th>Schizophrenia</th>
<th>Total</th>
<th>P-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job</td>
<td>54</td>
<td>33</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50,9%</td>
<td>31,1%</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>Jobless</td>
<td>52</td>
<td>73</td>
<td>125</td>
<td>0,004</td>
</tr>
<tr>
<td></td>
<td>49,1%</td>
<td>68,9%</td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>106</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 1 we can conclude that job status have a significant correlation with schizophrenia (p-value = 0,004). And we can conclude that a jobless individual have 2,297 times higher risk than working individual to suffer from schizophrenia.

**Discussion**

This research revealed that an unmarried individual has 12,107 times higher risk than married person to suffer from schizophrenia. Marital status is one of social-cultural predisposing factor of schizophrenia (Stuart, G.W., 2009). Unmarried status include individual whose never been married and a widowed person. A person in this condition could have less social support in their daily lives. Stuart (2009) in her Stress-Adaptation Model, explain that one of coping resources for individual is social support. Some citizen in the research location believe that schizophrenia occurs for the absence of personal support, and they believe marriage could make the client better.

In some case widowed status could be a precipitating stressors of schizophrenia. Although some client divorced for their maladaptive behavior because they suffer from schizophrenia before marriage. And marriage become another stressors for clients and sometimes it worsen the disorder.

A study held by Xue-JieLi, et al, analyzed the relation between marriage and social dysfunction on schizophrenic person. This study revealed that the married patient made a significant difference with divorced/widowed patient in mildly–moderately social dysfunction. There was a significant difference in married and never-married patient with mildly and profoundly social
dysfunction. Significant differences were noticed in the self care and occupational roles of the married patient with that of the never-married. (Xue-JieLi, et. all, 2015).

Educational level is one of social-cultural predisposing factor of schizophrenia. This research showed that lower educational level person has 3,863 times higher risk than higher educational level for schizophrenia, and jobless person has 2,297 times higher risk than the worked person for schizophrenia. Low educational level could be indirect causes for poor economic state. By having a low educational level, people would have difficulties to find a proper job. And then complicate the fulfillment of daily needs. In her model, Stuart explain more detail about predisposing factor related to this. Which is poverty, inability to get a job, work pressure, and so on. Job status showed how much someone could fulfill their needs. In this research, 58.9% (125 of 212) responden was jobless. It means that they could not fulfill their own needs, lives in insufficiency and depends on others such as their family.

This research in line with Townsend (2009) in her book, that social factor consists of age, gender, education, income, work, social position, cultural background, beliefs, political affiliation, social experience and social integration level. Based on research by Ho, Black & Andreasen (2003 in Townsend, 2009), schizophrenia occurs mostly in people with low socioeconomics. Live in poverty, insufficient nutrition, absence of prenatal care, lack of resources to face stress, and feel powerless to change a person's poor condition, may predispose to schizophrenia (Townsend, 2009).

Through the experience of the researcher, the respondent who is not working can not always depend on his / her family. One of the respondents in the study area was the mother of 4 children. This respondent suffer from schizophrenia and have no income. Respondents only rely on giving from neighbors to life. The patients with more education had lower levels of psychotic symptomatology than their counterparts with less education. This was most evident for affective flattening, alogia, avolition, and bizarre behavior. The higher education group also had better ratings on premorbid adjustment, and the engagement and vocational factors of the Quality of Life Scale. Patients in the high education group also performed better on the neuropsychological battery. There were no brain volume differences or differences in brain metabolism between the two education groups (Swanson CL, et.al. 1998)

Conclusion
This research showed that unmarried and widowed person has 12,107 times higher risk than the married person for schizophrenia. Lower educational level person has 3,863 times higher risk than higher educational level for schizophrenia, and jobless person has 2,297 times higher risk than the worked person for schizophrenia. It is suggested to the head of Mental Health Unit of Puskesmas Kersamanah to conduct several health education about marriage and the importance of higher educational level, and conduct a social-economical enhancement programs for schizophrenic clients. For example a simple job training, or make a cooperation with social organization to give a job or some goods for work.

Acknowledgements
This research was supported by Lembaga Penelitian dan Pengabdian Masyarakat (LPPM) School of Health Sciences Jenderal Achmad Yani Cimahi and Sukamerang Community Health Center, Kersamanah Subdistrict Garut District.

References
The Effect Inayah Outpatient Nursing Care (IONC) Model on Self Care and Client Satisfaction in Outpatient General Hospital

*Iin Inayah*, 2Budi Anna Keliat, 3Rr. Tutik Sri Haryati, 4Besral

1 School of Health Sciences Jenderal Achmad Yani Cimahi
2,3 Faculty of Nursing, University of Indonesia
4 Faculty of Public Health, University of Indonesia
*Email: driininayahmkep@gmail.com*

**Abstract**

Application of nursing care in outpatient general hospital is not optimal. Problems found are clients do not have the ability to self-care, have not been satisfied with the nursing care, and no information on self-care. This study aimed to identify the effect of Inayah outpatient nursing care (IONC) models against self-care and client satisfaction in outpatient public hospital. This study uses a quantitative method with quasi-experimental design and analysis of test-T, multiple linear regression and R Square to assess the suitability Fit Model. Interventions conducted on 9 nurses in medical-surgical outpatient trained to use the model, after the nurse implements at 1000 client as the intervention group and the control group of 1000 clients in outpatient. The results showed an increase in the ability of self-care and client satisfaction were significantly higher than those who did not. The most influential factor is the implementation IONC model, and the model proved to be fit. Model IONC should take place in a outpatient general hospital.

**Keywords:** IONC models, self care, satisfaction

**Introduction**

Outpatient nursing services currently require outpatient nurse, as a satellite outpatient hospital-based community (Blessington, 2013). Health Ministry's Strategic Plan 2015 - 2019 focuses on promotive and preventive, rather than curative and rehabilitative. Based on that outpatient care is health care that are directly related to public health services and is the first door, a marketing and development program focused on the goal of public health is very important and will determine the brand image of a hospital in delivering client satisfaction.

External customer satisfaction as a client on outpatient services will determine the loyalty of clients to continue treatment at the hospital or not. Client satisfaction is one indicator of the quality of services delivered to clients in addition to the services provided in accordance with established standards. The level of client satisfaction is a feeling that arises as a result of the performance of health services obtained after comparing it with the client what she expected (Quoili, 2009). Aspects of client satisfaction include the satisfaction of physical, mental and social clients. Satisfaction with the hospital environment, namely convenience, speed, accuracy of service, friendliness, attention, privacy, and so on.

Preliminary studies on clients in outpatient carried out through observation and interviews at the two hospitals, namely RS and RS Dustira Cimahi Cibinong, Bogor regency. On December 12 to March 14, 2012 to the 12 respondents in the Outpatient Installation consists of the client General, Department, Askes and Contractors, conveyed client complaints regarding the quality of health services, especially in the outpatient Hospital Level II Dustira Cimahi which causes the client not satisfied,
namely the lack of information obtained from the nurse, unclear nursing actions, nurses less friendly and responsive to client complaints, and the length of waiting time of inspection.

The results of the interview 10 clients in outpatient installation in Cibinong Hospital, a client complained about the lack of information the client's health problems, the role of nurses is minimal and the client does not know the role of nurses. Clients said that the role of nurses in outpatient care, which looks duties of nurses is calling clients and measure blood pressure. Nurses rarely seen health counseling on an outpatient clients. Most clients say nurse outpatient less responsive to the client's problem. Clients also complain of frequent recurrence of the same health problems due to ignorance in caring for him after receiving hospital treatment. This is in contrast to the concept of primary care, as a frontline hospital, the nurse must always be ready, quick to respond to any client problems and exercise authority in carrying out clinical nurse nursing care on each unit, including a hospital outpatient department.

Preliminary study on nurse outpatient observation and interviews at 12 hospitals, namely Cibabat Hospital, Dustira Hospital, RS Rajawali, Eka Hospital, Sukabumi Hospital, Cianjur Hospital, Subang Hospital, PMI Hospital, Lung Hospital Cisarua, Cengkareng Hospital, Hermina Jakarta Hospital and Syloam Hospital. Outpatient nurse at the hospital said some not yet providing nursing care on an outpatient basis. Description of the tasks of nurses in outpatient installation, just call the client, the client administration and measuring blood pressure and body weight clients. Outpatient nurses perform tasks appropriate job description hospital, while the outpatient nurse job descriptions set MoH RI in which there is health education. Based on this, the role of the professional nurse in the outpatient yet implement nursing care. At installation outpatient public hospital, according to hospital nursing field Cibabat, some nurses who want service in the outpatient department because they want the morning only. Based accreditation and job descriptions of nurses outpatient nursing care is required to make, but generally not done, caregivers generally confused in working and also documenting nursing care is very complicated, difficult to put together in a client cards, and often lost and rejected at the medical record. From the description can be perceived nursing management is not optimal on an outpatient basis.

According to discussions conducted on 57 nurses from seven hospitals in West Java (Cibabat Hospital, Dustira Hospital, Rajawali Hospital, Eka Hospital, Sukabumi Hospital, Cianjur Hospital, and Subang Hospital) on 23 September 2012 in which 6 of them are nurses care roads and emergency services to discuss the lack of the role of nurses in outpatient care that can reduce nurse competence. At another meeting with 30 nurses from three hospitals in West Java (PMI Hospital, Lung Hospital Cisarua), at a meeting in Santosa Hospital on September 19, 2012, in which four of them are room nurse outpatient and emergency department, said that nurses in space outpatient nursing skills tend to decrease, as a result of the lack of nursing care in outpatient, his task more for treatment and routine measurement of vital signs, as well as nurses rarely recognized health education. This statement is recognized by other nurses, where there are no standards of nursing care in the outpatient hall. Nurses in outpatient more of a role as the administration, there has been no standard format or nursing care nursing notes and input raw professional nursing role in outpatient installation.

At another meeting on 21 and May 24, 2013 at Hermina Hospital outpatient nurse said that the act of nursing in outpatient yet optimal. Nurses outpatient Cengkareng Hospital, Eka Hospital and Syloam Hospital said that in the existing format outpatient nursing care but the nursing actions were not there for outpatient care, nursing actions in the new outpatient health education, there is no other nursing actions.

Nurses in implementing nursing services, also affected the comparison between the nurse and the number of clients. Based on reports from several hospitals in preliminary studies, said that the comparison of the nurse and the client is 1: 20 in each shift. In this case the need for effectiveness of nursing care services are really needed by the client outpatient with limited time. Conditions of this limited time can not be a reason not nursing care provided to clients of outpatient hospital.

Conditions such as these can make the quality of outpatient care and less than optimal client satisfaction. Aspects of quality is an issue that must be considered by the hospital. While in 2014 the user's client hospitals began to use health insurance for free, and is necessary to guarantee the quality of outpatient hospital optimal. While the hospital has been using international standards accreditation, outpatient services already using the documentation of nursing care, health education, but the role of nurses have not had autonomy in providing nursing actions. The phenomenon that makes the researchers
are interested to conduct further research on the application of the model of outpatient nursing care to self care and client satisfaction in the hospital.

Method

Implementation of the study consisted of three phases. The first stage is the stage of exploratory research (client satisfaction outpatient observation outpatient nursing services and nursing diagnoses ten priorities in outpatient). The second stage is the stage of development of the model. The third stage is the stage of trial models of Nursing Outpatient Inayah (IONC). The results of this study describes the results of the three stages of the research.

Stage Exploration Results Client Satisfaction Research on Nurse Outpatient Services, Overview Implementation of Outpatient and Nursing Diagnosis Big Ten Priorities in Outpatient Hospital

The study consisted of three exploratory research is on client satisfaction towards nursing care in outpatient clients received, the implementation of nursing care in outpatient and research on the most common nursing diagnosis experienced by clients.

Results

1. Client Satisfaction in Nursing in Nursing Care in the Outpatient Hospital

Based on Table 1, 100 clients who visited the General Hospital of Integrated Outpatient Bogor, the highest satisfied 30% on two items, ie on several nurses mentioned the problem of nursing clients, and some nurses motivate the client attempts to recover. Lowest satisfaction of the client in the amount of 10% seen in some clients expressed continuing nursing education for themselves at home. The average satisfaction is 22%, still low, so all indicators of satisfaction assessment was included in model development IONC. Other exploration results of observation implementation of services performed by nurses outpatient.

2. Observation Nurses in Nursing Care in the Outpatient General Hospital

Based on Table 2, from 9 nurses who worked in the medical-surgical outpatient public hospital, the highest ministry as 100% on the second item, on all nurses to collect data on the client and measure vital signs and body weight clients. Nursing services at 10% low seen in some of the nurses carry out stages of orientation, work and evaluation, some nurses carry out the education of nursing in home as well as some nurses examined data for client focus. But the average nursing services only reach 37%. Results observation nursing services is still low, so that all the indicators included in the model IONC. The results of that picture ten other exploration priorities nursing diagnoses, performed on 100 clients who visited the outpatient General Hospital, is shown in Table 3.

3. Nursing Diagnosis Clients Big Ten Priorities in Outpatient General Hospital

The third study explores the most common nursing diagnosis experienced by clients based on the primary complaints.

Based on Table 3 of 100 clients in the adult medical-surgical outpatient public hospital, there are 25 major complaint, and taken 10 main complaint most. The main complaint is almost entirely client complained of pain (90%). This is in accordance with the national accreditation policy (KARS, 2012) and international (JCI, 2014) which makes the pain as part of the accreditation assessment indicators. The main complaint is the seventh lowest 30% are in their wounds are difficult to heal the diabetic client / gangrene, burns, cancer and injuries from skin allergy. Most of the 10 major complaint, along with the assessment results of physical examination data is client focus, analyzed based classified in the 2015-2017 NANDA nursing diagnoses.

Based on Table 3, the pain is the highest rating that is generally always complained of outpatients. More ratings of nursing diagnoses complained of outpatients complained appropriate client other than the chief complaint of pain, namely airway clearance less effective, less effective breathing patterns, decreased peripheral tissue perfusion, hiperthermi, physical mobility barriers, and damage to skin integrity.
The nursing diagnosis nutrition, anxiety and lack of knowledge, generally accompanying a nursing diagnosis of any major emerging nursing diagnosis. Each outpatient clients generally have one to seven nursing diagnosis can occur concurrently. Ten priorities diagnosis is incorporated into the model IONC.

Results Development Phase Model IONC
The results of the development phase of this model consists of models IONC, groove IONC and training curriculum IONC Model.

Model IONC
Model IONC is sintesan results of exploratory research, literature, consult experts, promoters and kopromotor, as well as inputs testers. Model Development IONC produce Nursing Documentation IONC (ND-IONC), Guide Nursing Process IONC (GNP-IONC), Guide Operating Procedures IONC (GOP-IONC), Strategic Communication Approach IONC (SCA-IONC), Evaluation Sheet Self Care IONC (ESSC-IONC), and Client Satisfaction Evaluation Sheet IONC (CSES-IONC).

### Table 1 Client Satisfaction in Nursing in Nursing Care in the Outpatient Hospital (n 100)

<table>
<thead>
<tr>
<th>No</th>
<th>Complaint</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nurses mentioned the problem of nursing clients</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Nurses not given outpatient treatment at the action</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>Nurse explains how self-care clients at home.</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Nurses and families involved in the client's nursing information.</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Nurses provide information supporting a safe environment for clients at home.</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>Nurse asks the client's family to help care client.</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Nurse asks the client's family to motivate and increase client confidence to recover her health.</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td><strong>22</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Min – Max</strong></td>
<td><strong>10 – 30</strong></td>
</tr>
</tbody>
</table>

when the client enters the outpatient hospital. Research results shown in Table 3.

### Table 2 Observations Implementation Services Performed by Nurses Nurse Executive Implement nursing care in Outpatient Hospital (n 9)

<table>
<thead>
<tr>
<th>No</th>
<th>Nursing Process</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nurses carry out the stages of orientation, employment and termination, in the content of nursing care and edukasinya.</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Nurses to collect data on the client.</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Nurses check vital signs and weight loss clients.</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Nurses educate nursing diagnoses based clients.</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Nurses examined data focus for professional nursing diagnosis</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Nurses and professional nursing diagnosis</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Nurses determine nursing interventions to be performed.</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Nurses do the implementation of nursing</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>Nurses perform formative evaluation</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td><strong>37</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Min – Max</strong></td>
<td><strong>10 – 100</strong></td>
</tr>
</tbody>
</table>

Nursing Documentation in outpatient (ND-IONC), is nursing care documentation with a format that refers to the national and international accreditation standards, comprehensive approach to self-care and client satisfaction, which can be done with limited time in an outpatient hospital. ND-IONC using assessment
data is the focus of the client, with the main complaint based on a client who came to an outpatient hospital. ND-IONC developed by 10 main priority nursing diagnosis outpatient hospital, which are the result of evidence base before ND-IONC developed.

Table 3 Nursing Diagnosis Frequent in Room Ambulatory and Surgical Hospital Poli In Integrated Health Home Dhuafa Wallet Parung Bogor (N 100)

<table>
<thead>
<tr>
<th>No</th>
<th>Nursing Diagnosis Priority</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pain</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>Airway clearance less effective</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Breathing patterns less effective</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>Hiperthermi</td>
<td>70</td>
</tr>
<tr>
<td>5</td>
<td>Decrease in peripheral tissue perfusion</td>
<td>70</td>
</tr>
<tr>
<td>6</td>
<td>Barriers to physical mobility</td>
<td>60</td>
</tr>
<tr>
<td>7</td>
<td>Damage to skin integrity</td>
<td>30</td>
</tr>
</tbody>
</table>

Nursing Diagnosis Secondary

<table>
<thead>
<tr>
<th>No</th>
<th>Nursing Diagnosis</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Less Knowledge</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Nutritional deficits</td>
<td>90</td>
</tr>
<tr>
<td>10</td>
<td>Anxietas</td>
<td>90</td>
</tr>
</tbody>
</table>

Min – Max 30 - 100

ND-IONC have a recording system that is practical, where a selection of items assessment, nursing diagnosis, implementation, evaluation of nursing mostly directly diceklist by nurses outpatient. ND-IONC it is possible to be continued into the Nursing System Information Management (SIM) Hospital. ND-IONC have a strong legal aspect, in which the name of the nurse, nursing care processes implemented date, signature nurse. ND-IONC have a record integrated with other medical staff in the outpatient hospital, according to hospital accreditation standards. ND-IONC pay attention to the safety of nurses / staff and clients. ND-IONC have grooves follow-up after hospital outpatient services, a referral from an outpatient hospital, whether the control back, hospitalization, home care, or other reference. Devices nursing care research results have shown attached. IONC models can be seen in figure 1.
Fig 1. IONC Model

   a. Assessment
   b. Nursing diagnosis
   c. Implementation
      1) The act of Nursing
      2) Self Care Education for Client and Family
   e. Evaluation
   f. Discharge Planning

**Client satisfaction towards the implementation of Nursing Care**

**ServQual**

- Service Delivery
- Reliability
- Responsiveness
- Assurance
- Tangibility

**Deficit**

- Self Care Deficit

**Self Care Therapeutic**

- Self care Agency

*Continuity of care*
In picture 1 depicted Model IONC, which in this model nurse outpatient clinical exercise authority in implementing nursing care by providing services, education and self-care as the issue of nursing clients and client satisfaction approach. IONC was conducted by 10 major priority nursing diagnoses in the outpatient hall. IONC executed within approximately 15 minutes of each client, and executed when a client after enrollment in outpatient, before the client gets the doctor's services. The nursing diagnosis can be made before the medical diagnosis is made. IONC do with the process of communication, orientation-stage phase-termination of work performed in an outpatient hospital. IONC using therapeutic communication guidelines in accordance with the client's nursing problems. IONC done by providing inform concern, carry out the process of nursing care using data from client focus, provides nursing actions that can be performed in outpatient care, educating self care to clients and families as well as provide a questionnaire client satisfaction after getting nursing care in outpatient, ended with provide follow-up plan (planning return / discharge planning) after doctors in outpatient services.

IONC filled integrated with other health professionals in the ambulatory space, and evaluate the safety of the client (patient safety) as well as other initial assessment according to the principles of accreditation. in the plan follow-up IONC can proceed with other services in the hospital, or home care / independent practice nurses. IONC optimize promotive and preventive, and rehabilitative besides caretif. This model is implemented by grooves in the diagram 2.
Training Curriculum IONC Model
IONC model training curriculum consists of a pre-test, post-test training materials. Pre and post test consists of a minimum of two trials of three components of the knowledge, skill and attitude. In this study tested the knowledge and skills of participants. The training material consists of training objectives, training benefits, explanations and guidelines and application modules IONC model practices. After the explanation of the material, the participants carried out a post test. Furthermore, participants carry IONC Model practice with mentoring and post test conducted on the extent to pass the gold standard is a minimum value of 80.

Results Stage Trial Implementation IONC Model
The results of the pilot phase of the intervention consisted of training results IONC models and test results IONC Model implementation.

Training Model IONC to Knowledge and Skills Nursing Care Outpatient
Before and after training, outpatient nurses assessed knowledge and ability to run the devices outpatient nursing care (IONC). Picture 3 shows the knowledge of nurses at 3 times the measurement, at 9 nurses in outpatient general hospital.

Based on picture 3, from 9 nurses in outpatient General Hospital, who conducted the knowledge test before, after training and a month after the intervention found that the prior training lowest score is 44 and the highest score is 76. Value after training 64 lowest and the highest grade 80. Value after one month of intervention, the lowest and highest 90 94. Value shows the nurse has passed the gold standard to continue the implementation of the model IONC.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Difference</th>
<th>Min - Max</th>
<th>p-value</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test</td>
<td>58</td>
<td>32</td>
<td>44 – 76</td>
<td>&lt; 0.0001</td>
<td>9</td>
</tr>
<tr>
<td>Post Test</td>
<td>70</td>
<td>16</td>
<td>64 – 80</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>&gt;1 month intervention</td>
<td>92</td>
<td>4</td>
<td>90 – 94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on this research, seen a significant influence on changes in knowledge training nurses in nursing care outpatient hospital. Marked with a p-value <α, ie <0.001. On average the final value of nurses is 93. In the item of knowledge, a higher value on the role and duties of nurses in outpatient, but the item implementation of nursing care and self-care education and standards of satisfaction in outpatient getting smaller value at the time before training or before the intervention. 1 month after the intervention value nursing care and self-care education and standards of satisfaction in outpatient get value exceeds the limit passed with 88 to 100.

In picture 4 indicates a significant increase nursing skills change in outpatients with p-value <0.0001 (p-value <α). Where the pre-test before the intervention skills of nurses is a minimum value of 64 and a maximum value of 69. In the first months after the intervention, nursing care skills of nurses in outpatient obtain a minimum value of 83 and a maximum value of 90.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Difference</th>
<th>Min - Max</th>
<th>p-value</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test</td>
<td>58</td>
<td>5</td>
<td>64 – 69</td>
<td>&lt; 0.0001</td>
<td>9</td>
</tr>
<tr>
<td>Post Test</td>
<td>70</td>
<td>10</td>
<td>76 – 86</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>&gt;1 month intervention</td>
<td>92</td>
<td>7</td>
<td>83 - 90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
intervention

The nurse's ability in applying nursing care after training and after the mentoring process look like in Figure 4 which shows the entire primary nurse on measuring all three have had the ability to apply score nursing care in hospital outpatient required is > 80. Once all nurses have competence in implementing outpatient nursing care, nursing care nurse outpatient implement this with a focus on the implementation of nursing care 10 nursing diagnosis has been made before.

Testing IONC Effect Model to Enhance Self-care and Client Satisfaction

Testing the effect of nursing care hospital outpatient towards self-care and patient satisfaction has five research results. The first part is the effect of the model of the 10 self-care IONC clients. The second part is the effect IONC models to client satisfaction. The third part of self-care relationship with client satisfaction. The fourth section reveals the factors affecting self-care clients and suitability of the model fit. The fifth part reveals the factors that affect client satisfaction and fit model.

Characteristics of clients in this research homogeneous, at the age of middle age and up. Men and women in this study balanced. Client education generally on primary and secondary education. Work clients mostly laborers, merchants and employees.

The Effect of Self Care Before and After the Implementation Model IONC the Control Group and Intervention

In the graph of self-care and intervention control group there were significant changes, in which the control group there was no change. Overall results of data showing the effect of the intervention on self-care change clients in outpatient hospital, shown in picture 3.

Based on the results of T-test analysis, found that there were significant differences based on the results mean and p-value less than 0.005 (p-value = <0.0001) on the difference before and after the intervention of nursing care outpatient (IONC) on 10 diagnosis the main nursing in outpatient hospital. In this case, the client's self-care in outpatient care can increase self-care after nursing care and education by nurses outpatient home sick. The highest difference in clients with pain, where the pain, almost always perceived client on each client's health problems experienced. In the interventions nurses, clients feel the pain perceived change in pain scale clients generally there are at least one pain scale changes after the intervention. Similarly, changes which greatly helps the client on changes in breathing patterns. Diagnosis is experienced with symptoms of shortness of breath, which generally occurs because of asthma. Clients greatly assisted by nursing actions that help facilitate clients to loosen airway client, so the client gets easier to breathe.

Fig 3. Graph Pre Post Control and Intervention IONC Models to Self Care Clients
Mean the smallest difference in this intervention nutritional deficiencies seen on the client, where the mean was already high before the intervention. This can occur where healthy nutrition information and ways of processing nutrients and diets for clients with a variety of health problems, the client can get from a variety of sources of information. Unlike the mean difference the smallest, namely on clients with damage to skin integrity, nursing actions focused self-care for nursing wounds and change dressings on the clients very rarely obtained and are taught by nurses to self-care independence of clients in her home, with the effective procedure for nursing skin integrity in non-infectious tissue / red network. Actions (manual operating procedures) nursing care self care in clients with damage to skin integrity is longer procedure skills compared to other procedures, so the act of nursing damage to skin integrity should be several meetings nurse with clients in outpatient, before the client can be removed independently to perform nursing self skin integrity. Basically all self-care in ten major nursing diagnosis, wholly experienced significant changes in self-care.

Differences Satisfaction Before and After the Implementation IONC Model the Control Group and Intrvensi

Based on picture 6, shows that before the intervention data showed the lowest satisfaction with 21 almost entirely in terms of giving consent form (inform concern) outpatient signed. The highest difference in clients with pain, where the pain, almost always perceived client on each client's health problems experienced. On the results of the intervention 10 major nursing diagnosis results obtained entirely undergo significant changes in satisfaction, comes from changes increase the mean and p-value less than 0.005 (p-value =

![Fig 6 Graph Pre Post Control and Intervention IONC Model to Client Satisfaction](image-url)
4. <0.0001). This shows that nursing is a part that can increase client satisfaction in an outpatient hospital.

5. Factors that Influence the self-Client Care and Compliance Fit Model

6. The characteristics of the client is the category that can not be separated from the client's ability to perform self-care. Then the characteristics of the client to do the analysis to see which factors can affect the ability of self-care clients, with multiple linear regression is education, occupation, gender and age. In Table Model Summary, looks coefficient of determination (R square) indicates a value, which means that the regression model obtained could explain variations in the dependent variable self-care.

And then on the 'ANOVA;' we see the F test results that show the value of p (sig) = <0.0001, meaning at alpha 5% we can state that the regression model fit (fit) with the existing data, or can be interpreted both these variables can significantly to predict variables self-care clients. In the box 'Coefficient' similarities we can obtain the line, in column B (in baglan Variable In Equation) above, we can see the regression coefficient of each variable. From the above results, the regression equation obtained after, one by one each of attempted variable excluded from the model, the results for the top ten diagnoses formula is:

1. Model IONC against Client Care with Pain:
   a. Self care Pain = 16 559 + 43 641 + models IONC self care Previous 0682 - 9046 advanced adulthood
   b. Based on the R Square = 0.866. Then this model explains the model fit as much as 86.6%.

2. Model IONC to Self-Care Clients with nutritional deficits:
   a. Nutrition personal care = 15 388 + 0593 + 33 083 self-care Previous models IONC
   Based on the R Square = 0.655. Fit this model explains 65.5%

3. Model IONC the Client with Impaired Care Airway Clearance:
   • Self-care Airway Clearance = 9021 + 0644 + 43 905 self-care Previous models IONC
   • Based on the R Square = 0.755. Fit this model explains 75.5%

4. Model IONC to Self-Care Clients with Pattern Breath Less Effective:
   a. Self-care Ineffective breathing pattern = 14 853 + 0693 + 51 113 Previous personal care IONC models - 11 969 age
   b. Based on the R Square = 0.804. Fit this model explains 80.4%

5. Model IONC to Self-Care Clients with Impaired Physical Mobility:
   a. Impaired Physical Mobility self care = 17 424 + 0551 + 55 438 Previous personal care IONC models - 9772 age
   b. Based on the R Square = 0.827. Fit this model explains 82.7%

6. Model IONC to Self-Care Clients with Perfusion Decreased Network:
   a. Decreased perfusion self-care network = 14 013 + 0576 + 49 320 Previous personal care IONC models - 5547 age
   b. Based on the R Square = 0.729. Fit this model explains 72.9%

7. Model IONC to Self-Care Clients with Integrity Damage Skin:
   a. Self-care Damage Skin Integrity = 20 925 + 0562 + 49 920 Previous personal care IONC models - 12 646 age
   b. Based on the R Square = 0.757. Fit this model explains 75.7%

8. Model IONC to Self-Care Clients with Anxiety:
   a. Anxiety self-care treatment = 23 011 + 0490 + 51 273 Previous self IONC models - 13 499 age
   b. Based on the R Square = 0.722. Fit this model explains 72.2%

9. Model IONC to Self-Care Clients with Less Knowledge:
   a. Less self-care knowledge = 4652 + 0743 + 63 959 self-care Previous models IONC
   b. Based on the R Square = 0.814. Fit this model explains 81.4%

This equation model fit and help us be able to estimate the self-care clients by taking into account the age of the client. As for the meaning of the coefficient B for each variable is as follows: the client is older than 1 year, then the treatment itself higher value according
to the value after controlling for age, on some models, such as the self treatment of pain, breathing pattern is not optimal, anxiety, decreased tissue perfusion, and damage to skin integrity. In this case the nurse should also in providing nursing care and self-care, also need to consider the age of the clients, especially the elderly. Where on some models of the client's self-care ability decline in clients with advanced age. Beta column can be used to determine which variable The greatest role (influence) in determining the dependent variable (self-care clients). The larger the beta value the greater its influence on the dependent variable, and therefore the greatest self-care factors in this model is the model that is implemented by nurses IONC outpatient.

Factors that Influence the Client Satisfaction and Compliance Fit Models
The results of the bivariate analysis of self-care relationship to client satisfaction can be seen in Table 6.

Table 6. Effect of Self Care Client to Client Satisfaction after the intervention (n = 1000)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Difference</th>
<th>Min – Max</th>
<th>p-value</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Care</td>
<td>57.31</td>
<td>55</td>
<td>30 – 85</td>
<td>&lt; 0.0001</td>
<td>1000</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>91.58</td>
<td>12</td>
<td>84 – 96</td>
<td></td>
<td>1000</td>
</tr>
</tbody>
</table>

In Table Model Summary, looks coefficient of determination (R square) indicates a value, which means that the regression model obtained could explain variations in the dependent variable of satisfaction, or in other words, three independent variables can explain the variation of the variable self-care by 3%. And then on the 'ANOVA; we see the F test results that show the value of p (sig) = <0.0001, meaning at alpha 5% we can state that the regression model fit (fit) with the existing data, or can be interpreted these three variables can significantly to predict variables client satisfaction.

1) In the box 'Coefficient' similarities we can obtain the line, in column B (in the Variables In Equation) above, we can see the regression coefficient of each variable. From the above results, the regression equation obtained after, one by one each of attempted variable excluded from the model, the result of the formula is:

1. Pain Satisfaction Model:
   a. Satisfaction Pain = 14283 + 0678 + 47907 models previously satisfaction IONC
   b. Based on the R Square = 0.889. Then this model explains the model fit as much as 88.9%.

2. Nutrition Satisfaction Model:
   a. Satisfaction Nutrition = 14093 + 0689 + 46841 Satisfaction Previous models IONC
   b. Based on the R Square = 0.889. Then this model explains the model fit as much as 88.5%

3. Satisfaction Model Airway Clearance:
   a. Satisfaction Airway Clearance = 14093 + 0689 + 46841 Satisfaction Previous models IONC
   b. Interpretation: This nutrition pure satisfaction from the results of the intervention, because no interaction from the client characteristics

4. Satisfaction Model Ineffective breathing pattern:
   a. Ineffective breathing pattern Satisfaction = 21806 + 0524 + 45695 Satisfaction Previous models IONC
   b. Based on the R Square = 0828. Then this model explains the model fit as much as 82.8%

5. Satisfaction Model Impaired Physical Mobility:
   a. Satisfaction Impaired Physical Mobility = 31729 + 0187 + 47321 Satisfaction Previous models IONC + 5874 age
   b. Based on the R Square = 0.805. Then this model explains the model fit as much as 80.5%

6. Perfusion Decreased Satisfaction Model Network:
International Seminar on Global Health (ISGH) 2017
Stikes Jenderal Achmad Yani Cimahi

a. Perfusion Decreased Satisfaction Network = 12,457 + 0.722 + 44,677 Satisfaction
Previous models IONC
b. Based on the R Square = 0.892. Then this model explains the model fit as much as 89.2%
7. Satisfaction Model Damage Skin Integrity:
a. Satisfaction Damage Skin Integrity = 31,822 + 0.169 + 47,524 Satisfaction
Previous models IONC + 6668 age
b. Based on the R Square = 0.803. Then this model explains the model fit as much as 80.3%
8. Satisfaction Model Hiperthermi:
a. Satisfaction Hiperthermi = 13,337 + 0.786 + 43,396 Satisfaction Previous models IONC
b. Based on the R Square = 0.884. Then this model explains the model fit as much as 88.4%
9. Anxiety Satisfaction Model:
a. Satisfaction Anxiety = 11,389 + 0.765 + 43,367 Satisfaction Previous models IONC
b. Based on the R Square = 0.882. Then this model explains the model fit as much as 88.2%
10. Less Satisfaction Model Knowledge:
a. Less Satisfaction Knowledge = 22,793 + 0.487 + 42,126 Satisfaction Previous models IONC
b. Based on the R Square = 0.804. Then this model explains the model fit as much as 80.4%

This equation model fit and help us be able to estimate the clients' satisfaction by using variables
and self-care education. As for the meaning of the coefficient B for each variable is as follows:
each increase by 1 year of age client, then the client's satisfaction will increase by value after
controlling the age variable in the model damage to skin integrity and physical mobility constraints.
In both models, in conditions of clients with physical mobility as well as damage to the integrity of
the skin, generally a much-needed nurses or family help, either early adulthood or older adults, so
satisfaction in this model has the interaction of age. Beta column can be used to determine which
variables are most roles (influence) in determining the dependent variable (customer satisfaction).
The larger the beta value the greater its influence on the dependent variable. On the results of the
above means that the variable greatest effect on the determination of client satisfaction is the
implementation of the model implemented IONC outpatient nurse.

Implementation of the model should be implemented IONC nurses, thus becoming work culture.
Work culture can be obtained by carrying out this IONC models at least 6 months, in which the
first 3 months with close supervision, and three months later was minimal supervision.

Conclusion
IONC Model significantly improve self-care Clients in Outpatient General Hospital. IONC Model
significantly increase client satisfaction in the Outpatient General Hospital. Self-care and client
satisfaction IONC Model get significantly higher compared with those not getting the intervention
models. Departement Outpatient Hospital implementing IONC Model, then the self-care clients in
10 major nursing diagnosis can be increased by 26,333 to 63,959 times and this Model Fit
explained by 54% - 87.3%. Departement Outpatient Hospital implementing IONC model, the
client satisfaction can be increased 42,126- 47,907 times and this Model Fit explained by 80.3% -
89.2%. The more the client is able to self-care, the more satisfied clients. Self-care and client
satisfaction is most affected by the implementation of the Model IONC. This Model Fit in
explaining the suitability of the model. IONC recommended to be applied in nursing care in
hospital outpatient credentials performance as a nurse in an outpatient hospital. IONC socialization
needs to be done to outpatient hospital to its application. For the hospital this model is expected to
answer hospital accreditation standards which focus on client service became one of the targets of
the application IONC.

The results of this study, namely the mastery of clinical skills of nursing care and nursing
skills are given to clients outpatient capable resolved nurses every day and every month, and
terekap in the system manual recording mapun computer information system of outpatient
hospital, can be used for performance assessment nurses and other nurses reward. IONC can be
used as a policy for the health ministry to be applied in outpatient hospital in an effort to meet the
accreditation standards related to quality hospital services that focus on the client. IONC Model
can be evidence base of the health ministry in setting the standard nursing care services in an
outpatient hospital. Insurance with IONC models will help to reduce dependence clients will
facilities outpatient hospital care, and as baseline studies budgeting nursing services in insurance. IONC concept can be a material that is taught as a science enrichment nursing management on the functioning and implementation process. IONC concept is the development of human resource management function in developing credibility outpatient nurse who must implement nursing care nursing services in each unit.

References


DPR RI (2009). Undang Undang No. 36 tentang Kesehatan. DPR. Jakarta

DPR RI. (2009). Undang Undang No. 44 tentang Rumah Sakit. DPR. Jakarta

DPR RI. (2014). Undang Undang No. 38 tentang Keperawatan. DPR. Jakarta

DPR RI. (2014). Undang Undang No.36 tentang Tenaga Kesehatan. DPR. Jakarta


Grace, P et all. (2013). Nursing Ethics and Professional Responsibility in Advanced Practice. Johnness & Grace Publisher


Kemenkes RI. (2013). Permenkes No. 49 Tahun 2013 tentang Komite Keperawatan Rumah Sakit


Reminiscence Therapy for the Elderly with Loneliness in Social Institution of Tresna Werdha Banjarbaru South Kalimantan

1Dhian Ririn Lestari*, 2M. Akbar Nugraha
1,2School of Nursing Lambung Mangkurat University, Indonesia
*E-mail: dhianrl2016@gmail.com

Abstract

Getting old or aging is a condition that is definitely happened in the life cycle of a human. Becoming an elderly person means a decrease of social activity caused by decreasing of physical and social functions. A feeling of loneliness of the elderly living in an institution emerges due to a desire or a need to interact with other people is limited even nothing at all. Reminiscence therapy is a gradual memory therapy of life cycle focusing on pleasant memories. Reminiscence therapy in group can improve a sense of value, alleviate the feeling of loneliness, and improve communicative ability in group. Reminiscence therapy through pleasant memories can influence a feeling of an elderly person so that it is influential to negative feeling such as loneliness. The study used quasi experiment method with pretest and posttest without control group, with inclusion criteria of the elderly aged minimally 60 years, were able to communicate actively and willed to be a study respondent. The purpose of this study was to find out the effect of reminiscence therapy on loneliness of the elderly in PSTW Budi Sejahtera Banjarbaru South Kalimantan. Based on analysis test result using t-test dependent (pvalue = 0.000), pvalue<0.05, it was concluded that there was a significant effect of reminiscence therapy on loneliness level of the elderly in Social institution of tresna werdha Banjarbaru. Reminiscence therapy can modify the loneliness level of the elderly in Social institution of tresna werdha Banjarbaru South Kalimantan.

Key words: Elderly, nursing, reminiscence

Introduction

Getting old or aging is a condition that is definitely happened in the life cycle of a human and started from the beginning of human’s life (Padila, 2013). The elderly is a term for someone aged 60 years or over (World Health Organization, 2010). Getting into old-aged undergoes much physically and psychologically deterioration. Becoming an elderly person affects on decreasing of social activity caused by decreasing of physical and social functions. Decreasing or falling into a decline of elderly abilities on social activity can affect on decreasing of integrity ability with surrounding areas. The decrease of this ability affects on the emerging of a feeling of loneliness on the elderly (Nugroho, 2012).

An individual prosperity of the elderly is a significant part that needs to be concerned and a problem generally happened to the elderly in Indonesia. Furthermore, most of the elderly have been estimated living in poverty so that it is assumed that their quality of life has not been adequate.

According to Social Department of RI, in 2010 there were 444 old-people institutions in Indonesia (Wreksoatmodjo, 2012). National Council on Ageing and Older People study reported that the prevalence of the elderly in America that experienced loneliness was 62%. In Indonesia, a study from (Damayanti, 2013) on loneliness done in old people’s home of Pakutandang Bandung resulted that most of the elderly had a feeling of loneliness in moderate level 11%, mild level 69%, severe level 2%, and not lonely 16%. The data-base of the elderly in East Java in 2012 reached 3 million people or 10.4% (Kementerian Kesehatan Republik Indonesia, 2013). It is predicted to increase to 30-40 million by the year 2020. The increasing and rising of the elderly in Indonesia resulted in risk rate of loneliness is growing, estimated 50% of the elderly currently have been suffering from loneliness (Amalia, Hestie & Sulistyarini, 2008).

Loneliness is defined as strong indicator when someone felt isolated and ignored by other people. Social isolation and loneliness have had negative effect on the elderly prosperity either physically or psychologically. Behavior and symptom correlated with loneliness were similar with
the mild depressive symptom and included in social isolation, constipation, weight loss, insomnia, or sleep disorder, vomit, and loss of appetite (Allen N.B, 2003).

Psychological problem happened to the elderly other than low self-esteem, depression, and stress is a feeling of loneliness or a risk to experience loneliness. NANDA (2015-2017) has explained the risk of loneliness is vulnerable to experience uncomfortableness related to a desire or a need to interact with other people with some risky factors such as: deprivation effect, emotional deprivation, physical isolation, and social isolation (Herdman, R Heather & Kamitsuru, 2015).

It has been known that the elderly lived or moved by the family in an institution are vulnerable to feel lonely due to a desire or a need to interact with other people is limited or nothing at all.

Intervention of reminiscence therapy is an alternative intervention in nursing field on Nursing Intervention Classification (NIC) to solve the loneliness of the elderly. Reminiscence therapy is a therapy aimed at therapeutic memories in the elderly (Johnson, 2005). The focus of reminiscence therapy is to help the elderly to recall the past during childhood, adolescence, and adulthood as well as the relationship with family, and continued with sharing with the other elderly. Through this therapy, the elderly are expected would recall the pleasant memories from the past (Haight, 2002).

The strengths of reminiscence therapy in group are: first, group approach can play role as a medium for catharsis, accounting for the fact that expressing a number of complaints are a very therapeutic matter for the elderly. Second, the elderly would have a chance to meet other elderly and develop a sense of intimacy, altruism, and support each other in order to improve social supports, that mostly alleviate dramatically in the elderly than the younger. Third, group approach also would give a chance for the elderly to share their problems to one another, and find out the similarity of their problems; hence, they realize that other people have similar problems, and they can conceive solution for one another presumably acceptable to be used in daily lives (Haight, 2002).

There were many studies related to the solutions of psychological problems in the elderly using reminiscence therapy. The effect of reminiscence therapy in improving self-esteem and alleviating depression significantly, incapacity, despair, and social isolation for the elderly (Syarniah, 2010). The effect of reminiscence therapy and family psychoeducational therapy in improving the quality of life and alleviating depression significantly, incapacity, despair, and social isolation for the elderly (Banon, 2011).

Past memories could improve self-integrity of an elderly person and accept the life cycle as something that has happened and as it was due to the need, desire, and without replacement. This reminiscence therapy gave benefit to maintain self-identity since the elderly would use their past experience to defend their opinion from critics (Johnson, 2005). Reminiscence therapy intervention to the elderly could improve their self-identity as well as their self-esteem, a sense of acceptance from other people and themselves that alleviated the feeling of loneliness of the elderly (Pinquart M, Duberstein PR, 2007).

Social Institution of Tresna Werdha Budi Sejahtera managed by Social Department in South Kalimantan is in two places, those are on jalan A.Yani km 27 Landasan Ulin Banjarbaru and on jalan A.Yani km 38 Martapura. In accordance to law of regional autonomy in 2002, the management is the authority of Social Department in South Kalimantan including staff management, facilities, and budgets. PSTW in Banjarbaru South Kalimantan has 13 homes with capacity of 110 elderly, whereas PSTW in Martapura has 7 homes with capacity of 60 elderly. It is projected that the oldest age in the two places is 100 years with placement of the elderly in each home (group). The elderly in PSTW Budi Sejahtera Banjarbaru and Martpura mostly (70%) had no family whereas the elderly that still have family are 30%. The activities done in PSTW Budi Sejahtera Banjarbaru or Martapura are religious counseling (religious talk, read Ya-sin, mawlid habsyi), social counseling such as group work, group therapy, public relation, environment relation, health counseling and social recreation, skill counseling such as sewing, embroidering, braiding, and making cakes. All the activities are done based on the schedule and physical condition of the elderly. Whereas the given of health facilities are more focused on the demand of physical health of the elderly, not on the management of the demand and psychological problems of the elderly (Profile of PSTW Budi Sejahtera).

This study was done in PSTW Budi Sejahtera in Banjarbaru South Kalimantan. The purpose of this study was to find out the effect of reminiscence therapy through pleasant memories to alleviate the feeling of loneliness of the elderly living in Social Institution of Tresna Werdha.
Methods
The study used quasi experiment with pretest and posttest without control group; the inclusion criteria of the elderly were minimally aged 60 years, were able to communicate actively, and willed to be a study respondent. The purpose of this study was to find out the effect of reminiscence therapy on the feeling of the elderly in PSTW Budi Sejahtera Banjarbaru South Kalimantan.

The population of the study was all the elderly living in Social Institution of Tresna Werdha Banjarbaru South Kalimantan. The sampling technique used was non probability sampling through purposive sampling. The exclusion criteria of this study were the elderly with severe depression, conscious impairment or psychotic symptoms, not able to communicate cooperatively and not willed to be a respondent. The number of sampling of the study was 30 respondents of the elderly.

The study was done in Social Institution of Tresna Werdha Banjarbaru South Kalimantan. The instrument used was questionnaire for collecting data of the elderly that had the feeling of loneliness. The form of the questionnaire was mixed, closed and opened. The respondents had to choose the closed questions with the given answers, and fill the answers for the opened questions. UCLA Loneliness Scale Version 3 developed was used as the other instrument to collect the data of the feeling of loneliness. The UCLA Loneliness Scale was a unidimensional measurement accompanied by 4 answers: never, sometimes, usually, and always. The scale contained 20 items, nine of them were positive items and eleven of them were negative items (Russell, 1996).

This study has been passed the ethical conduct number 448/KEPK-FK UNLAM/EC/VII/2017, Banjarmasin in July 2017.

Results
1. The characteristics of the elderly in PSTW Budi Sejahtera Banjarbaru South Kalimantan
The characteristics of the elderly with loneliness consisted of age, gender, and education level. Categorical data of the results including gender and education level was analyzed by using frequency distribution, while the numeric data including age was analyzed by using central tendency to calculate mean, median, min-max, and standard deviation.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>30</td>
<td>70.73</td>
<td>71.00</td>
<td>5.866</td>
<td>60-82</td>
</tr>
</tbody>
</table>

Table 1 showed that the respondents of the elderly of this study were 30 people, the mean was 70.73, the median was 71.00, the standard deviation was 5.866, and the youngest respondent was aged 60 years and the oldest was 82 years.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>21</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Education Level</td>
<td>Illiterate</td>
<td>7</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>Elementary School</td>
<td>11</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Junior High School</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>High School</td>
<td>7</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 2 showed that the respondents of the elderly in this study were mostly male (70.0%) and in elementary school level (37.0%).

2. Analysis of Loneliness Level of the Elderly Before Reminiscence Therapy
The analysis of loneliness level before the therapy done in group was calculated using central tendency to know the mean, median, standard deviation, and minimum and maximum scores. Normality test on loneliness variable was analyzed.

**Tabel 3 Analysis of Loneliness Level of the Elderly Before Reminiscence Therapy in Social Institution of Tresna Werdha Banjarbaru 2017 (n=30)**

<table>
<thead>
<tr>
<th>Level</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loneliness</td>
<td>30</td>
<td>43.40</td>
<td>41.00</td>
<td>6.547</td>
<td>35-58</td>
</tr>
</tbody>
</table>

Based on the table above obtained the mean of loneliness level of the respondents in group was 41 (mild loneliness) with minimum score was 35 (mild loneliness) and maximum score was 58 (moderate loneliness) with standard deviation was 6.547.

3. **Analysis of Loneliness Level of the Elderly After Reminiscence Therapy**

The analysis of loneliness level after reminiscence therapy in group was done using central tendency to obtain mean, median, standard deviation, minimum and maximum scores.

**Tabel 4 Analysis of Loneliness Level after Reminiscence Therapy in Social Institution of Tresna Werdha Banjarbaru 2017 (n=30)**

<table>
<thead>
<tr>
<th>Level</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loneliness</td>
<td>30</td>
<td>35.83</td>
<td>33.50</td>
<td>5.565</td>
<td>30-48</td>
</tr>
</tbody>
</table>

Based on the table above obtained the mean of loneliness level of the respondents in group was 35.50 (not lonely) with minimum score was 30 (not lonely) and maximum score was 48 (mild loneliness) with standard deviation was 5.565.

4. **The Change on Loneliness Level Before and After Reminiscence Therapy**

The analysis of the change on loneliness level before and after the therapy in group that had given Reminiscence Therapy was done using paired t-test.

**Tabel 5 Analysis of the Change on Loneliness Level before and after Reminiscence Therapy of the Elderly in Social Institution of Tresna Werdha Banjarbaru South Kalimantan 2017 (n=30)**

<table>
<thead>
<tr>
<th>Loneliness Level</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min-Max</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreTest</td>
<td>30</td>
<td>43.40</td>
<td>41.00</td>
<td>6.547</td>
<td>35-58</td>
<td>0.000</td>
</tr>
<tr>
<td>PostTest</td>
<td>35</td>
<td>35.83</td>
<td>33.50</td>
<td>5.565</td>
<td>30-48</td>
<td></td>
</tr>
</tbody>
</table>

Based on the table above obtained the mean score of lonely elderly before reminiscence therapy was 41.00 (mild loneliness) with standard deviation in 6.547. After reminiscence therapy has been given, obtained the mean score decreased into 33.50 (not lonely) with standard deviation in 5.565. Based on the result analysis of bivariate test, obtained p value = 0.000. It was concluded that there was a significant change between the level of loneliness before reminiscence therapy and after reminiscence therapy on the loneliness level of the elderly in Social Institution of Tresna Werdha Banjarbaru.
Discussion

1. The Characteristics of the Elderly in Social Institution of Tresna Werdha Banjarbaru Kalimantan Selatan

The characteristics of the elderly in Social Institutions of Tresna Werdha Banjarbaru South Kalimantan obtained by the researchers showed the respondents of this study mostly were male (70.0%). The unmarried men felt more severe loneliness than women, yet they were not willing to acknowledge it (Pinquart M, Duberstein PR, 2007). Men felt lonelier than women. It was predicted because women are more expressive than men. Therefore, women can give intimacy in their own lives. A less expressive person usually is a man that felt more severe loneliness if the spouse is not expressive and cannot give intimacy (Brehm, 2002).

Based on the result of the study, it was found that the elderly were illiterate (23%), and in elementary school level (37%) meant that the elderly in PSTW Banjarbaru South Kalimantan mostly had mild education level. Coping mechanism of oneself was affected by socio-economy status, family, interpersonal relation, organization in social environment such as social organization group in society. The lack of those sources would add stress to the person, therefore, required support of coping mechanism in solving the problems of a person (Pinquart M, Duberstein PR, 2007).

The characteristics of age of the respondents showed that the average age was 71 years. It was known that the different prevalence obtained in this study was based on the age. The number of the elderly reporting the feeling of loneliness was relatively low, yet there was a possibility that the prevalence experienced the feeling of loneliness would not decrease in aged 60 (Johnson, 2005). The average age of the respondent was a risky age to emerging of the feeling of loneliness.

2. Effect of Reminiscence Therapy in Group on Loneliness of the Elderly

The result of parametric statistical test with paired sample t-test was pvalue = 0.000 which meant that there was an effect of reminiscence therapy for the elderly with loneliness. In group, the elderly share their experiences and pleasant feelings in the past starting from childhood, adolescence, and adulthood and their memories with their family.

Based on the result, it was found out that the mean of the loneliness level of the respondents before reminiscence therapy was 41.00 (mild loneliness) with standard deviation in 6.547. After given reminiscence therapy, the mean of the loneliness level was 33.50 (not lonely) with standard deviation in 5.565. The result of analysis test showed pvalue = 0.000, hence, it can be concluded that there was a significant change between the loneliness level before and after reminiscence therapy of the elderly in Social Institution of Tresna Werdha Banjarbaru.

American Nursing Association has acknowledged reminiscence therapy has an independent nursing intervention. This intervention can be used either in hospital or social institution to enhance the quality of life, memory, consciousness of the elderly and improve their health. Study has shown that reminiscence therapy has been effective in improving individual perception for the current situation, strengthening self-esteem, alleviating depression symptom, disappointment, and negative emotion such as discomfort and loneliness (Yousefi et al., 2015). Reminiscence, according to Burnside & Height in (Yousefi et al., 2015), is a process to recall past experiences and events of oneself and focused on pleasant memories. Reminiscence also has improved the ability of the elderly to recall good matters and solved the current problems, hence, it can enhance pleasant feeling, safety, health, self-identity, ownership, death preparation, intimacy, and psychological health and prosperity of the elderly (Yousefi et al., 2015).

Reminiscence therapy is a method engaging the elderly to recall past memories. Integrative transmission, instrumental reminiscence therapy, and spiritual were various techniques that have been found. Based on the result of the study, it was found that reminiscence therapy has had a significant effect on the feeling of loneliness for the elderly. This study should further be supported by qualitative study analyzing the perception of the elderly in order to have a complete picture of reminiscence therapy intervention (Elias, Neville and Scott, 2015).

The effectiveness of group reminiscence therapy on quality and well-being of the elderly. The result showed the intervention was effective on well-being, yet was not affected the quality of life significantly (Yousefi et al., 2015). Reminiscence therapy frequently has been used on depression, dementia, loneliness, and quality of life, yet rarely used in positive psychology field and well-being of the elderly women. Furthermore, the study showed reminiscence therapy was effective to enhance positive emotion of the elderly women in Iran (Yousefi et al., 2015).
According to the study of (Sharif et al., 2010) stated that reminiscence therapy was effective in improving cognitive status of the elderly. Reminiscence therapy was projected as recalling the past events, feelings, and thoughts in order to create and facilitate a pleasant feeling, enhance the quality of life, and can accept the current situation (Sharif et al., 2010).

Reminiscence therapy resulted in the elderly felt pleasant, alleviated sadness, distress, loneliness, and the feeling of sin. Reminiscence therapy resulted in compatibility strength, and individual skill that resulted in consciousness and enhanced social function, content life, and self esteem, and decreased the feeling of loneliness of the elderly (Akhoondzadeh, Jalalmanesh and Hojjati, 2014). According to the study of (Chiang et al., 2010) stated reminiscence therapy given for the elderly for 3 months had positive effect in decreasing psychosocial problems, depression, and loneliness of the elderly (Chiang et al., 2010).

Reminiscence therapy in this study was carried out in group. Group reminiscence therapy gave a chance to the elderly to be a listener of other people. The variety of supports and social responses from others meant a lot for the change of the loneliness to the elderly living in an institution. The respondents of this study mostly were the elderly that have had no family.

During the process of group reminiscence therapy, the elderly were given a chance to interact and communicate with other elderly in group. This event definitely gave positive impact on the ability of the elderly in creating interaction with the others. Reminiscence therapy aimed to improve socialization ability and relationship with others, and improve communication ability (Haight, 2002).

(Perese, Simon and Ryan, 2008) found out the improvement on the ability of the elderly in sharing information, improving their interests to others, and ability to give feedback to others during participation in reminiscence therapy. This study found the improvement on the ability of the elderly in communication, their interests on pleasant memories from groupmate by listeing and responding to the similar stories from group members.

Conclusions
The elderly in Social Institution of Tresna Werida participated in the study that experienced mild loneliness were 24 people (80%) and experienced moderate loneliness were 6 people (20%).

The characteristics of age of the elderly in Social Institution of Tresna Werida Budi Sejahtera participated in the study moderately was 71 years. The gender of the elderly in Social institution of Tresna Werda Budi Sejahtera moderately was male, 21 (70%). The education level was mostly in elementary school, 11 (37%).

The change of the loneliness level of the elderly before reminiscence therapy was 41.00 (mild loneliness) with standard deviation in 6.547 changed into 33.50 (not lonely). There was an effect of reminiscence therapy on the elderly in Social Institution of Tresna Werda Banjarbaru South Kalimantan.

Acknowledgement
The researchers would like to express gratitude and appreciation to the Head of Social Institution of Tresna Werda Banjarbaru South Kalimantan for permitting and supporting this study to be conducted there and to all of the respondents for their participation and cooperation during the study.

References
International Seminar on Global Health (ISGH) 2017
Stikes Jenderal Achmad Yani Cimahi


The Effect of Cooperative Play to Emotional Intelligence of Pre School Childern in Rumah Bintang Islamic

Nunung Nurjanah*, Siti Dewi Rahmayanti
Nursing Study Programme, Stikes Jenderal Achmad Yani Cimahi
*Email: shafwatunnisa@yahoo.co.id

Abstract

Number of emotional disturbance in Indonesia reached 259 of 1000 pre school children. Emotional disturbance will give a bad impact in social and emotional development. Emotional disturbance could be intervee with cooperative play. The purpose of this research is to apply the cooperative play to increase the emotional intelligence in pre school children. This was a quasi eksperimental pilot research. Sample to this research were pre school children (3-5 years). Number of samples were 30 pre school children by using purposive sampling technique. Data collecting was done by emotional intelligence examination, by using Emotional Intelligence Questionair which is develop by institution of early pre school education. Data analysis used paired t test to compare the children emotional intelligence, before and after intervention. Statistical test result showed p value 0.001, so it can be concluded there was the influence of cooperative play to pre school children emotional intelligence. Suggestion for the pediatric nurse are to make the collaboration with the pre school institution to detect and stimulate the pre school children emotional intelligence.

Key words: Cooperative play, emotional intelligence , pre school children

Introduction

Children are unique individuals, because each child has their own characteristics. Pre-school age children begin to interact with other people. In this case children should have competencies in language and social relationships, because children begin to learn the role, self-control, and concept (Hockenberry & Wilson, 2009). Differences in treatment within and outside the home, can result the children experiencing unpleasant situations, so it can cause negative emotional reactions. This could be happens because the emotions in pre-school children are very unstable, temporary, spontaneous, and can not be hidden (Santrock, 2011). These emotions can make the child difficult to deal with, even temper tantrums, the emotional outbursts of uncontrolled children (Hockenberry & Wilson, 2009).

Data analysis of Household Health Survey (HHS) in Indonesian children emotional disturbance shows a high number of 259/1000 children. Studies of HHS morbidity in Java and Bali found an emotional disturbance rate of 99/1000 inhabitants (Annisa, 2014). Emotional disorders in children, could be a problem in the daily life of the child’s, if did not addressed properly and appropriately.

Emotions must be managed intelligently, so it is necessary to identify the child’s ability in control and manage their emotions. The ability of a child to manage emotions can be identified through the examination of emotional intelligence that is now widely developed by institutions of Early Childhood Education. Emotional intelligence is the ability of children to recognize emotions themselves, manage emotions, motivate yourself, recognize the emotions of others, and foster relationships with others (Goleman, 2009). At this time the development of physical and personality took place very rapidly (Ball & Bindler, 2007). Therefore, in this pre-school period, children should begin to trained to develop their personality through the development of emotional intelligence, in order to be able to foster good social relations (Mulyadi, 2011).

Emotional intelligence is influenced by environmental factors (Hurlock, 2006). Child’s environment relate to various human characters. Therefore, children should be able to adapt with the environment. To get that aim, it is necessary to stimulated by introduce children to learn social development through playing methode. Playing is the right of every child (Hockenberry & Wilson, 2009). With playing, children can learn to know objects, time, space, structure, and relationship with others (Ball & Bindler, 2007).
The method of playing that can be done to improve the ability in interact and work together is a cooperative play. Cooperative play are organized, which is the children play in groups. The cooperative play aims to enable children to work together, so they can create and achieve something that has been agreed upon (Goldstein, 2012). Cooperative play is very appropriate done by children at the age of pre-school, because in this situation children learn to communicate and interact socially, especially with peers. Cooperative play involve children playing in groups. Types of cooperative play include dragon snake, stage puppet, floor puzzle, ball throwing games, role playing and many other types of games that initiate children to learn to work together.

In Ricki’s research (2014) note that the puzzle affect the emotional intelligence. Similarly, other studies show the dragon's snake has an effect on emotional intelligence. In some studies the type of play that is performed only one game, so that children will be bored if the game does not vary. Therefore in this study conducted several types of cooperative play such as floor puzzles, mini basket ball, puppet stage, story telling, and playing cards. All of these games belong to a kind of cooperative play. Based on interviews, there are 4 kindergartens from Sekejati Sub-district, from the four kindergartens, one of which is a kindergarten that has been established for around 8 years and has the largest number of children. The Kindergarten named Rumah Bintang Islamic Pre School. This kindergarten never done an emotional intelligence examination routinely and rarely performed cooperative play on a regular learning. Based on the examination of emotional intelligence performed on 10 children, it is known 8 children have low emotional intelligence.

Therefore it is necessary to identify the children's emotional intelligence and give the right stimulation to develop the emotional intelligence. The aim of this research is to apply the cooperative play to increase the emotional intelligence in pre school children.

Method

The research design used was quasi experiment "Pre Test Post Test One Group Design". The research done to one group twice before and after experiment which commonly called pre test and post test (Pollit & Hungler, 2005). The sampling technique used in this research is purposive sampling which is one of non-probability or non random sampling technique, which is a technique of determining the sample by selecting the sample among the population according to the desired of the researcher so that the sample can represent the characteristics of the population has been known before (Sabri & Hastono, 2008). Sampling technique used is purposive sampling. This research with degree of significance 5% and strength of test (power) 90%, then big sample 30 respondents. Sample size was obtained from sampling formula with paired variable (Dahlan, 2008).

The data collection was done at Rumah Bintang Islamic Pre School from June to August 2017. The instrument used was an instrument of measuring emotional intelligence developed by Early Childhood Education Institution, this instrument measured the ability of children to understand themselves, manage themselves, understand the feelings of people other, and social skills of children to their environment (Malahayati, 2009). This instrument consists of 20 items, with good interpretation if the score is 13-20, and less if the score is 1-12, but the data analysis using the number of the score. The data were collected by the research team performing an emotional intelligence examination on pre-school age children, then the researcher gave cooperative play intervention to the children in groups every day for 10 days, with the duration of each play in each group about 30 minutes. The cooperative play that was performed on every monday is a big floor puzzle, on tuesday is mini basket ball, on wednesday is an expression card game, in this game, each child must express through gestures and movements to his group's friends, then his group's friends should guess the gesture performed. Then on thursday is a story telling, which is every child reading the book in turn, then discuss together from the story that has been read. The last, on friday performs a stage doll game by each group. The same game is done in the first week and second week of research. After intervention, the researcher measured an emotional intelligence again to the child using the same instrument.

Independent variable in this research is cooperative play and dependent variable is emotional intelligence of pre school children with score 0-20. The data were analyzed using univariate and bivariate analysis to know the difference of child development before and after intervention by using different test of two dependent mean. In the normality data test results that show normal distributed data then bivariate analysis used is a parametric test with the type of test different two mean dependent (paired t test).
Results and Discussion

Table 1. The Average Score of Emotional Intelligence of Children Before Intervention at Rumah Bintang Islamic Pre School

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min - Max</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Intervention</td>
<td>13.46</td>
<td>1.106</td>
<td>10-18</td>
<td>13.06 – 13.86</td>
</tr>
</tbody>
</table>

The results of the analysis in the above table obtained the average score of emotional intelligence of children in Rumah Bintang Islamic Pre School is 13.46. The lowest score is 10 and the highest score is 18. In the measurement of emotional intelligence before the cooperative play it is found that 11 out of 30 children or about 36.7% get the score less than 13, it indicates that the child have unfavorable emotional intelligence. This is in line with research conducted Achmad and Husdayanti (2010) that children who has low emotional intelligence as much as 17.6% and Novita (2015) note 42.2% emotional intelligence of pre-school age children is still low.

Based on the examination of each item in emotional intelligence, the deficiency of each child is largely on the lack of ability to understand the feelings of others and social skills to the environment. The ability to understand the feelings or emotions of others is the ability to feel what others feel, be able to understand others perspectives, cultivate relationships of trust and harmony with people or society (Goleman, 2009). The social skill of the environment is the ability to foster relationships with others. The ability to control emotions when dealing with others, carefully reading the situation and social networks, interact smoothly, understand and act wisely in human relationships (Goldstein, 2012).

A child who has poor emotional intelligence, can be caused by lack of stimulation on emotional intelligence. According to Goleman (2009), parents can stimulate children's emotional intelligence, among others, parents need to re-examine how the parenting pattern that has been done, if necessary willing to act in ways that contrary to the habits of parenting, such as too protective, let the children get experience disappointment, not being too quick to help, supporting children to overcome problems, showing empathy, establishing firm and consistent rules. In parenting aspect, parents also need to pay attention to the stages of development of emotional intelligence, need to train children to recognize emotions and manage it well. Parents play an important role in providing stimulation of emotional intelligence, however, before developing children's emotional intelligence, parents should first have emotional intelligence in him.

The lack of intelligence in pre-school children can still be intervene through structured stimulation (Santrock, 2011). If the child has low emotional intelligence, then the quality of life of children will decrease. Therefore it is very important to stimulate, especially structurally in pre-school children to be optimized emotional intelligence through cooperative play (Soetjiningsih & Ranuh, 2013).

Table 2. The Average Score of Emotional Intelligence of Children After Intervention at Rumah Bintang Islamic Pre School

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min - Max</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Intervention</td>
<td>17.56</td>
<td>0.621</td>
<td>12-20</td>
<td>17.33 – 17.78</td>
</tr>
</tbody>
</table>

The results of the analysis in the above table obtained the average assessment of emotional intelligence of children in Rumah Bintang Islamic Pre School after the intervention was 17.56. The lowest score is 12 and the highest score is 20. From the interval estimation result it can be concluded that 95% is believed that the average score of children's emotional intelligence after intervention is between 17.33 – 17.78. This range of scores indicates that child's emotional intelligence is in good category.

This is in line with Ismail's (2017) study, which is get the social ability of children as much as 80% has good ability. The group who had been given structured stimulation through cooperative play is known that the scores of children’s emotional intelligence is at the range between 12-20. Of the 30 children, only 2 children had scored 12 with less interpretation of emotional intelligence. The aspects that make the child has low emotional intelligence is child still shows less understanding of feelings each others, for example still feel no need to congratulate his
friend who became champion or not yet want to help his friends who are in trouble. In addition, children also lack the social skills to the environment, such as children can not yet split their friends who quarreled. The other 28 children on the basis of the examination score of 15-20 with a good interpretation of emotional intelligence. Various studies in child psychology have proven that children with high emotional intelligence are happy, confident, popular, and more successful children in school. They are able to control the emotion, establish a sweet relationship with others, can manage stress, and have good mental health (Mashar, 2011).

After intervention with cooperative play, the child’s emotional intelligence are changes. Changes experienced are the increase in the ability to set himself, for example the child was brave to perfomed in the front of the class, then understand the feelings of others for example willing to lend to their friends, and in social skills to the environment, the child would invite friends who often play alone. But the stimulation effort that has been given for 2 weeks did not give the optimal results because only 4 children are able to achieve the highest score (20). Therefore something that has become a habit will be more difficult to change and takes a longer time. This is in accordance with the explanation according to Soebadi (2008), that the habit will settle in the child's unconscious brain, so that the negative habits should be changed with consistent and sustained intervention. Therefore, to change the habit will not be optimal if only intervened in 2 weeks, so it needs to intervene longer and consistent.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min – Max</th>
<th>95% CI</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Intervention</td>
<td>13,46</td>
<td>1,106</td>
<td>10-18</td>
<td>13,06 – 13,86</td>
<td></td>
</tr>
<tr>
<td>Post Intervention</td>
<td>17,56</td>
<td>0,621</td>
<td>12-20</td>
<td>17,33 – 17,78</td>
<td></td>
</tr>
</tbody>
</table>

The child's emotional intelligence score before the intervention is in the range 10-18 whereas after intervention is in the range of 12-20. Meanwhile, when viewed from the average score identified before the intervention got an average value of 13,46 and after intervention changed to 17,56. So there is a difference of 4,1 points, the difference in points is very meaningful because it shows the child's inability to manage certain emotions changed to be able to manage emotions well. Result of statistic test got p value 0,001 hence can be concluded there is influence of game cooperative to child emotional intelligence. This is in line with the research of Lilard et al (2013), Arini (2016), and Utami (2017) on the influence of cooperative learning on children's social skills, which shows the influence of learning with the game on the social skills of children.

Children who have not been able to manage themselves, are less able to understand the feelings of others, and have less social skills to the environment, but after intervention there are changes. Changes in the ability of children is obtained through the stimulation with cooperative play, each child is given stimulation for 30 minutes each day for 2 weeks. The stimulation provided in cooperative play, that capable to improve emotional intelligence. In mini puzzles floor and mini basketball, children are required to be able to organize strategies by communicating in groups, keeping in mind the ability of each group member, and to be able to appreciate the friends of other groups who win the game. Then in the game of expression cards and story telling techniques, every child should be able to express their feeling, recognize the expression of others, and empathize with the feelings of others. Furthermore, in stage dolls, children are trained to play a role in the family and school environment, so that they are expected to have social skills on the environment.

In pre-school period, speech and language development, creativity, social awareness, emotional, and intelligence are running very fast (Ministry of Health, 2016). Moral development and the basics of the child's personality are also formed at this time, so that when encountered any slight deviation, can be intervened immediately. Development is an expansion of ability through growth, maturation, and learning that occurs generally, having a level of complexity from lower to higher (Ball & Bindler, 2007).

The development is the increase of the body's ability in coarse motion, smooth motion, and language, as well as socialization and independence (Hockenberry & Wilson, 2009). The
development will be optimally if given stimulation. Stimulation is an activity to stimulate the basic ability of children to grow and develop optimally (Hockenberry & Wilson, 2009). Each child needs to get regular stimulation as early as possible and continuously at every opportunity. Stimulation of child growth can be done by parents who are the closest to the child, substitute or caregiver; other family members, or community groups in their respective home environment in daily life (Ministry of Health, 2016). Stimulation is not something difficult and expensive. Stimulation is something that is easy and cheap, but provides tremendous benefits for the achievement of development. Stimulation can be done by using a simple, safe, and aids tool or game around the child (Goldstein, 2012). At the time of stimulation should provide the same opportunities in boys and girls, so that both boys and girls are able to achieve optimal levels of development.

Conclusion

Before the implementation of cooperative play, the average score of emotional intelligence in children at Rumah Bintang Islamic Pre School is 13,46. If based on the interpretation of the instrument examination, the score between the ranges 1-12 indicates that the child unfavourable emotional intelligence, meaning there are some emotional management capabilities that have not been optimal. After the intervention was obtained the average assessment of emotional intelligence of children in Rumah Bintang Islamic Pre School after the cooperative play is 17,56. In the assessment of emotional intelligence before and after the intervention, the difference average between the first and second measurements are 4,01. Result of statistic test got p value 0,001 hence can be concluded there is influence of cooperative play to child emotional intelligence.

Based on the results of the research it is known that through cooperative play given, there are changes in the ability of child emotional intelligence, that increase the ability to manage emotions include the ability to understand their self, self-regulate, understand the feelings of others, and social skills to the environment. Therefore, for nurses who take part in the nursing of children, is expected to cooperate with the public health services in mother and child health programs, the services in public health should not only detect nutritional status and health status, but also detect psychological development such as emotional intelligence. In addition, pediatric nurses can also work together with the school to conduct screening activities of child development, so that the child’s development can be known and given stimulation according to the competence of children in every developmental tasks. So it can be increase the quality of life. Further research could identify the relationship between the child emotional intelligence with the health status, to improve the relationship between physical health and psychological health.

Acknowledgment

We would like to thank to Ministry of High Education and Research and Technology for the funds that have been given in the research grant of novice lecturer and also for School of Health Sciences of Jenderal Achmad Yani Cimahi for the supported given.

References


Goleman, D., 2009. Emotional intelligence: Emotional intelligence is why EI is more important than IQ. PT. Gramedia Pustaka, Jakarta

Goldstein, J., 2012. Play in children’s, development, health, and well being. TIE, Brussels


SaintLouis


International Seminar on Global Health (ISGH) 2017
Stikes Jenderal Achmad Yani Cimahi

Ministry of Health RI., 2016. *Guidelines for the implementation of stimulation, detection and early intervention of child development at the primary health care level.* Ministry of Health RI., Jakarta


Malahayati,, 2009. *Ready to be a genius from an early age IQ, EQ, SQ for children aged 3-7 years.* Kendi Mas Media, Jakarta


Utami, T., 2017. The influence of cooperative learning on children's social skills in kindergarten Fatahilah Sukoharjo. UMS Digital Theses Project (www.UMS.ac.id)
Abstract

Generally, the anxiety will give the bad impacts to young women if the problem is not solved immediately. This research aims to find out the influence of group guidance using home room technique on anxiety level of young women who confront menarche grade IV, V in Aisyiyah Islamic Centre Elementary School Cianjur. This research uses quasi-experimental method which uses one group pre test-post test design. The sample of this research is young women who confronts menarche grade IV and V. The level of anxiety consists of low, middle, and high. The number of respondent that is taken by using purposive sampling is 20. Univariate analysis uses mean and bivariate analysis uses t-dependent test. The result of the research is the score average has significant diversification based on before and after intervention of group guidance using home room technique. The value is Pvalue= 0.0001 <α (α = 0.05). It means there is a significant influence young women who confront menarche in Aisyiyah Islamic Centre Elementary School Cianjur. Theoretically and practically, this research is significant for all of educator in Aisyiyah Islamic centre Elementary School Cianjur. Hopefully, all of educator in Aisyiyah Islamic centre Elementary School Cianjur will implement the group leading using home room technique to build students’ comprehension about menarche.

Key Words: Anxiety, home room, menarche

Introduction

Young women in Indonesia experience average menarche at 13 years of age, with early incidence at age less than 9 years or later at 17 years of age. In West Java, about 0.1% of young girls experience menarche three years before age 6-8 years, 11-14 years around 58.4% of girls who experience menarche and at age 17-18 years about 4.4% who have menarche (Riskesdas, 2010). Menarche has a unique psychological role that can influence attitudes until adulthood, therefore preparations are needed in the face of it. One of the preparations that must be done is psychic preparation. Psychic preparation can be achieved when getting clear and correct information about menstruation (Meilani, menarche, 2012). During this time some people are still taboo to talk about menarche in the family, so early adolescents lack the knowledge and attitude that is good enough about the physical and psychological changes associated with menarche. Because of this, young women are more happy and open discuss with peers rather than with parents. Consequently teenagers will get information that is less precise. It can also lead to confused feelings, questions, fears and anxieties for young women ahead of menarche. (Proverawati, 2009).

This condition is in line with the results of Rifrianti's research (2013), states that young women who face menarche majority experience anxiety that is as much as 79.9%, and only 20.1% of teens who do not feel anxious. (Sudjana, 2015) stated that girls who face the majority menarche experience anxiety as much as 96.5% and only 3.4% of teens who do not feel anxious. Even the results of the study (Syaiful & Khairirah, 2015) states that 100% of girls facing menarche experience anxiety.

A person will experience anxiety when he or she is unable to cope with the psychosocial stressors it faces (Hawari, 2011). Anxiety that arises continuously and not immediately addressed, can cause excessive and repeated fear of menstruasi. Likewise Anxiety in the face of menarche can occur due to lack of information about menarche. Methods to overcome anxiety can be done in several ways, according to Hawari (2011) there are several ways to overcome anxiety such as humanistic therapy, psychopharmaceutical therapy, somatic therapy, psychotherapy, psychosocial therapy, family approach, psycho-conscious therapy.
Research using counseling method to overcome anxiety is research conducted by (Fitriani & Rohman, 2016) entitled "The Effect of Counseling on Young Women Anxiety Experiencing Menarche" conducted at SDN Baros Mandiri 4 students of class IV, V, VI sample of 18 students concluded that counseling significantly affects girls' anxiety decrease with menarche with an average score of anxiety score before giving counseling as much as 25.67% after counseling the mean value of an anxiety score of 17.50%.

In general there are two methods in counseling guidance services, namely first method of individual guidance, and both methods of group guidance. Group guidance methods are known also with guidance (group guidance) while individual guidance methods are known as individual counseling. Rusmana, 2009 (in Meizinanti 2016) suggests that group guidance is best used to address persolan in adolescence (students), as most teenagers prefer to group, because of the group they can get a sense of security and comfort. Feelings received in a group are fun and can increase self-confidence; they have a distinctive identity, and can sometimes improve their self-image as well.

There are several techniques performed in group guidance. One of the techniques used in group guidance is the family creation technique (Homeroom Technique). The homeroom technique is a technique for holding meetings with a group of teenagers or students outside the lesson hours in a family atmosphere, and led by a teacher or counselor. (Meizinanti, 2016) The result of Putri's (2013) research entitled "Application of Homeroom Group Guidance to Improve Student's Understanding on Free Sex Hazard to Student of Class XI-IS I in SMA Negeri 1 Mojokerto. This research is a quantitative research pre experimental design with pre-test design post-test design, with the number of respondents 7 students of the results of application of guidance group home room techniques can improve understanding of the danger of free sex. It can be known by the increasing score of understanding of the danger of free sex after the guidance of the group using home room techniques. Dewi (2008) research result states that homero technique.

Method
The design of this study using pre-design expriment with one group pretest approach - post test design. The research was conducted at SDN Aisyiyah Islamic Centre Cianjur. The population in this study is the fourth grade student, V SD Aisyiyah Islamic Center Cianjur who faces menarche. Sampling method is done by nonprobability sampling technique with purposive sampling type which is a sampling technique with certain consideration which have been made by researcher, based on cirri or nature of population which have been known before (Riyanto, 2011). The sample in this research is fourth grade girls, V who faced menarche at SD Aisyiyah Islamic Center Cianjur who menglami mild, moderate, and heavy anxiety.

Result

<table>
<thead>
<tr>
<th>Table 1 Values of Youth Adolescent Anxiety Score, V Facing Menarche Before Conducting Technical Group Home Room Guidance in SD Aisyiyah Islamic Center Cianjur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variabel</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Anxiety</td>
</tr>
</tbody>
</table>

Based on the results of table 1 found that the average score of respondents anxiety score before the guidance of the home room technique group is 58.35 including into mild anxiety.
Table 2 The Average Score of Young Women’s Anxiety Score of Class IV, V Facing Menarche After Conducting Technical Group Home Room at SD Aisyiyah Islamic Center Cianjur

<table>
<thead>
<tr>
<th>Variabel</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimal</th>
<th>Maximal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>20</td>
<td>39.05</td>
<td>9.763</td>
<td>25</td>
<td>58</td>
</tr>
</tbody>
</table>

Based on the results of table 2 it is found that the average score of respondents anxiety score after the guidance of home room technique group is 39.05 including into the category not anxious.

Table 3 Differences of Average Score of Young Women's Anxiety Level IV, V Facing Menarche Before and After Performed Group Technical Guidance Home Room

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Asses</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>Pre-test</td>
<td>58.35</td>
<td>7.576</td>
<td>20</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Post – test</td>
<td>39.05</td>
<td>9.763</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 3 it shows that the mean anxiety score before intervention was 58.35 included into mild anxiety with deviation standard value of 7.576 while the mean score of anxiety score after intervention was 39.05 included into the not anxious category with a standard deviation value of 9.763. Meanwhile, based on the results of T-test Dependent obtained Pvalue = 0.0001 (Pvalue <α) α used 0.05, then H0 rejected and Ha accepted. It can be concluded that there is a significant influence of home room technic group guidance on the level of anxiety of girls in class facing menarche class IV, and V at SD Aisyiyah Islamic Center Cianjur in 2017.

Discussion

Anxiety before Home Room Intervention. Based on table 1 above, it is known that the results showed that adolescents experienced anxiety with an average - anxiety level of 58.35 which means anxiety felt by girls who face menarche including mild anxiety. This is in line with research conducted by Rifrianti (2013) in SMP Warga Surakarta, stated that girls who face menarche majority experience anxiety that is as much as 79.9%, and only 20.1% of teenagers who do not feel anxious. (Sudjana, 2015) states that girls who face the majority menarche experience anxiety as much as 96.5% and only 3.4% of teenagers are not worried. This is reinforced by the results (Syaiful & Khariroh, 2015) states that 100% of adolescents daughters facing menarche experience anxiety.

Menarche can lead to negative reactions. This negative reaction is caused by a poor view of a young woman against the emergence of menarche. Anxiety teenage girls can be caused due to the ignorance of young women about physiological changes in the early phase of a teenager Mansur (2009). Respondents in this study experienced an average of mild anxiety. In mild anxiety conditions cause a person to be alert and increase his perceptive field. Mild anxiety if not resolved will cause a big problem because when someone experiences mild anxiety, the individual tries to find the right information to overcome his anxiety, if the individual gets the wrong information will result in anxiety increasing the individual’s anxiety. Therefore when individuals experience mild anxiety should be addressed one of them by providing appropriate information. According to the results of observations by researchers, based on the results of interviews and the process of digging feelings when the guidance of home room engineering group, a factor that
many affect the anxiety facing menarche in adolescents is the knowledge factor of menarche. When facing menarche respondents say do not understand about menarche, what changes happen to him, what will happen next and do not know what to do when they experience menarche because his parents never talk about menarche, his parents only give explanation that reponden already big and should be more careful in what other men friend. Feelings of confusion and anxiety surround the feelings of a woman facing menarche, it will get worse if the knowledge of teenagers about menstruation is very less and education from parents who are less. The existence of parents who are less precise that this is a taboo to discuss and assume that the child will know by itself (Proverawati, 2009). Education and knowledge are part of the factors that affect anxiety, the higher the level of education and one's knowledge the easier the person is receiving information, so that anxiety can be overcome (Syailf and Kharioroh 2015)

The majority of respondents who face menarche say shy, irritable, anxious and scared to be ridiculed by friends at school when later experiencing menarche, confused because of physical changes in his body. This is in accordance with the statements Proverawati and Misaroh (2009) physical changes and reproductive organs that begin to function (early signs of menarche), can affect teenage emotions. Adolescents begin to recognize and pay attention to themselves, body shape, and compare with what is considered ideal by the environment. This makes teenagers sometimes feel sad, embarrassed and depressed.

Anxiety after Home Room Intervention, based on table 2 above, it is known that from the results of the study showed that the score of anxiety respondents who face menarche after the guidance of home room technique group experienced a decrease that has an average value of anxiety of 39.10 which means that the average anxiety score felt after given the intervention of the home room group's technical guidance is at the level of no anxiety, based on the Zung Self Rating (ZSAS) anxiety scale. Anxiety in adolescent girls facing menarche at SD Aisyiyah Islamic Center Cianjur decreased. This can happen because the guidance of the home room technique group is done by creating an atmosphere, such as at home which is done outside of school hours, this can help the respondents reduce feelings of anxiety facing menarche experienced by respondents, between respondents with counselors and respondents with other respondents and create the atmosphere is so comfortable to make them express what they feel like at home, and with the provision of information on how to overcome anxiety facing menarche.

Giving information using counseling (either individually or in groups) is one of the non-pharmacological techniques to reduce or decrease the level of anxiety felt by a client of Hawari (2011). The benefit of group counseling services is to have the opportunity to contact many students; provide information needed by students; students can be aware of the challenges to be faced; students can accept themselves after realizing that their friends often face similar problems, difficulties and challenges; and more daring to express his own views when in a group; given the opportunity to discuss things together; more willing to accept a view or opinion. With so the anxiety experienced by respondents can be reduced, because with the guidance of the group to make respondents can accept all that is in him Winkel & Sri Hastuti in Sukardi (2008).

The Effect of Home Room Technic on Anxiety, based on table 3 shows the average score of anxiety in adolescents who face menarche before and after given the guidance of home room technique group is 58.35 and 39.05. Thus, anxiety scores in adolescent girls facing menarche decreased by 19.3. So that the test of anxiety score statistic in adolescents face menarche before and after given guidance group home room technique obtained pvalue = 0.0001 (Pvalue <α) α used is 0.05. Indicates that there are significant differences between the group guidance on the anxiety of fourth grade girls, and V who faces menarche at SD Aisyiyah Islamic Center Cianjur.

Giving service bimbigan home room engineering group is very influential on the decrease in anxiety levels because most respondents who experience anxiety partly due to lack of information. This is evident from the distribution of adolescent girls who experience anxiety after group guidance. Prior to the guidance of home room technique group from 20 respondents got 11 respondents experiencing mild anxiety (55%), 7 respondents experienced moderate anxiety (35%), and 2 respondents had severe anxiety (10%). After the guidance of the home room technique group 16 respondents did not experience anxiety (80%), but there are still a mild anxiety that is 4 respondents (20%), those who experience mild anxiety say they are not ready to face menarche because there are some things that have not they understand about menarche.

The guidance of the home room technique group is a technique done by the counselor in helping students solve problems by creating a family atmosphere that is used to hold meetings with a group of students both in class and out of class with a comfortable and open atmosphere. Thus the information conveyed is easily absorbed and the anxiety can be reduced Damayanti
Providing guidance of home room technique groups against young women who face menarche turned out to affect the decrease in anxiety teenage girls at Aisyiyah Islamic Elementary School Cianjur. Respondents may reveal their previously embarrassed and dishonest content. But because it created an open atmosphere respondents can be honest with what they feel. Provision of information as a form of motivation to respondents so that respondents do not feel anxious with menarche. Influence After getting correct information happened positive change of perception and anxiety of respondent decrease, beside that there is positive influence from peers who already feel not worried, they give positive influence to other peers who still feel anxious, so the anxiety of respondents can also decreased rapidly.

Conclusion

The average score of anxiety teenage girls fourth grade, and V who faced menarche sebelum done guidance home class technique group is 58.35 including into mild anxiety. The average score of anxiety teenage girls fourth grade, and V who faced menarche sebelum done guidance home room technique group is 39.05 including into not worry. There is influence of home room tech group guidance to level of anxiety of adolescent girls facing menarche class IV, and V at SD Aisyiyah Islamic Center Cianjur 

\[ \text{Pvalue} = 0.0001 \text{ (pvalue < } \alpha) \]

\[ \alpha \text{ used } 0.05. \]

References


The Effect of Passive Leg Raising towards Hemodynamics on Patient with Hypovolemic Shock at the Emergency Ward of Dustira Cimahi Hospital

Evangeline Hutabarat
Nursing Science Dept., Stikes Jenderal Achmad Yani Cimahi
Email: evangelinehtbarat@gmail.com

Abstract
One of the conditions needing immediate response in the emergency ward is hypovolemic shock. The patient in shock requires close monitoring for clinical signs and hemodynamic status and intravascular status. It is due to circulatory assistance and medication provision on the patient is given based on the accuracy of the intravascular volume status of the patient. Fluid responsiveness can be considered as basis for considering administering fluid only or inotropic and vasopressor medication for the patient to maintain her circulatory homeostatic. Passive Leg Raising (PLR) may be a reversible method to evaluate fluid responsiveness. The study aims at evaluating the effect of PLR on hemodynamic. It employs the quasi-experimental design with the within subject repeated measurement design approach. 48 respondents took part as samples, with the consecutive sampling method implemented. The samples were then categorized into responsive and non-responsive groups based on the increase of pulse pressure amounting to or beyond 9% during PLR implementation. The data was tested using the dependent and independent t test to provide analysis for uni-variate and bivariate data. The results indicated that 34 respondents belonged to the responsive group while 14 respondents were categorized as non-responsive. There was a significant relationship between PLR and hemodynamic parameters of systolic blood pressure, diastolic blood pressure, mean arterial pressure, and pulse pressure (p>0.05). It implied that PLR may be used as an evaluation method for fluid responsiveness on patients with hypovolemic shock.

Key words: hemodynamic, hypovolemic shock, passive leg raising

Introduction
One of the conditions that requires immediate action in Emergency Ward is shock. It is an emergency that needs aggressive therapy and continuous monitoring of blood circulation. (Aaronson & Ward, 2010, Jevon & Ewens, 2009).

Circulation assistance is generally conducted by fluid resuscitation. Among the types of shock, hypovolemic shock with various etiology shows a high prevalence in the Emergency Ward. A study conducted by Levy et al (2004) and Otero et al (2006) concluded that early and accurate administration on hypovolemic shock can reverse a hypoxia state as well as prevent organ failure. On the contrary, excessive fluid resuscitation for shock causes fatal lung edema and gas exchange. Literary studies show that excessive fluid provision relates to incidents of complications among emergency ward patient, sustain LOS and increases mortality (Rosenberg, 2009; Murphy, 2009; Boyd, 2010).

The ability of a nurse in the emergency ward in identifying the intravascular volume status of an emergency ward patient is crucial and fundamental (Singh & Lighthall, 2011). Fluid responsiveness can be interpreted as the ability of a patient to maintain her homeostasis circulation through only fluid provision or inotropic as well as vasopressor. In reality, fluid resuscitation does not always improve hemodynamic (Frederic, 2002). Passive Leg Raising (PLR) may be a reversible method to judge whether it is beneficial for the patient. During PLR administration, to the extremity of 45° elevation, approximately 500 cc of blood from such lower extremities will flow to an intra thoracic compartment area and increases the left and right ventricle preloads and consequently affects the ventricular stroke volume (SV) towards CO (Monet, 2008).
Literature Review

Hypovolemic shock treatment can be done through intravenous fluid administration and if needed inotropic medication to maintaining cardiac functions or vasoconstrictor medication to handle peripheral vasodilatation. It also ceases visible hemorrhage and acute pain immediately which may be the causes of shock.

Circulation assistance given is based on the accuracy of the intervascular volume status and fluid responsiveness. A method to evaluate fluid responsiveness is Passive Leg Raising where both legs are elevated and the fluids or blood from such extremity flows to the central circulation to raise SV and CO followed by hemodynamic changes. If PLR is able to raise pulse pressure at least 9% the patient is considered responsive and will benefit from fluid provision (Levitov, 2011, Summers, 2010 (Lamia, 2007, Caile, 2008).

Circulation assistance given is based on the accuracy of the intervascular volume status and fluid responsiveness. A method to evaluate fluid responsiveness is Passive Leg Raising where both legs are elevated and the fluids or blood from such extremity flows to the central circulation to raise SV and CO followed by hemodynamic changes. If PLR is able to raise pulse pressure at least 9% the patient is considered responsive and will benefit from fluid provision (Levitov, 2011, Summers, 2010 (Lamia, 2007, Caile, 2008).

Hemodynamic monitoring is the center of critical and emergency patient nursing. In a research from Badin, Boulain ans Ehrman (2011) MAP is a predictor of acute kidney injury (AKI). It was found that patients experiencing shock and having below normal MAP (< 65mmHg) in the first 24 hours runs the risk of experiencing AKI in the next 72 hours. Besides MAP, changes in pulse pressure (PP) or the difference between SBP and DBP is more accurate to detect shock than SBP where the normal pressure is approximately 30-40 mmHg. In hypovolemic shock, a significant decline in SV and PP can occur before a notable drop in SBP. PP is determined by SV (the amount of fluid ejected in every cardiac contraction) compliance arterial system and ejection characteristics during diastole. PP remarkably reflects SV (Aaronson & Ward, 2010).

Passive Leg Raising (PLR) or more commonly referred to as the shock position is carried out by emergency nurses at the pre-hospital or hospital phase on shock patients to sustain maximum blood flow to vital organs. Passive Leg Raising has another important use which is to predict whether a patient will benefit from fluid resuscitation administration. When PLR is performed with a 45° elevation, blood from lower vein extremity flows to intrathoracic compartment area and raises right and left ventricle preload and affects the volume of contracted ventricle and heart flow (Monet, 2008).

Method

The study is a quasi-experiment research deploying the Within Subject Repeated Measurement design. The population comprises of patients with hypovolemic shock at the Emergency Ward of Dustira Cimahi Hospital in the duration of the research period. The sampling technique was that of consecutive sampling which every criteria qualifying patient was included until the number needed was met.

It also deployed the coupled numeric-analytic research type implementing errors of type I at 1.65 and type II at 0.84, a combined standard deviation of 6.4 and a significant minimum difference of 4.8 thus the population of 24 patients. The independent variable was Passive Leg Raising (PLR). PLR is a method to predict whether a patient requires fluid resuscitation: when legs are raised at a 45° angle fluids from lower limbs flow to the central circulation and increases the stroke volume whose effects is visible from the changes of the hemodynamic parameters (Preau, et al, 2010; Jabot, Teboul, Monynet & Richard, 2009).

The dependent variables were the hemodynamic parameters, namely MAP (mean arterial pressure) and PP (pulse pressure). The research was conducted by implementing Passive Leg Raising (PLR) which was elevating both lower extremities of a respondent using two pillows for two minutes. Before observation, the degree between the legs were raised and the bed was measured with a goniometer bearing 45° followed by liquid intravenous administration of NaCl 0.9% as much as 500 cc (loading), compliant to the local protocols of shock patient treatment at the Emergency Ward of Dustira Hospital where the research was conducted.

Results and Discussion

Most respondents belong to the mid-adult age group category (62%). Based on gender, most respondents are male (37.5%). Most respondents are categorized into the responsive group (71%) and all respondents were given a diagnosis of acute gastroenteritis.

The following table represents the hemodynamic averages in every stage of observation/data accumulation based on the responsive and non-responsive group categories.
Table 1 The Averages of Hemodynamic Based on Observation Stages and the Responsive and Non-responsive Groups.

<table>
<thead>
<tr>
<th>Variabel</th>
<th>B1 Mean ± SD</th>
<th>PLR Mean ± SD</th>
<th>B2 Mean ± SD</th>
<th>IV Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsif</td>
<td>76.41 ± 6</td>
<td>81.53 ± 5.9</td>
<td>80 ± 5.7</td>
<td>83 ± 5.7</td>
</tr>
<tr>
<td>Non-responsif</td>
<td>76 ± 6.5</td>
<td>70 ± 4.42</td>
<td>76 ± 4.3</td>
<td>79 ± 7.6</td>
</tr>
<tr>
<td>PP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsif</td>
<td>26.76 ± 5.0</td>
<td>28.2 ± 5</td>
<td>26.8 ± 4.9</td>
<td>29.8 ± 5.23</td>
</tr>
<tr>
<td>Non-responsif</td>
<td>26.71 ± 3.55</td>
<td>28.0 ± 2.7</td>
<td>26.9 ± 2.6</td>
<td>28.14 ± 2.5</td>
</tr>
</tbody>
</table>

Note: B1 (baseline 1) = before PLR, B2 (baseline 2) = after PLR/before fluid IV administration, IV = after fluid IV administration.

The results of the responsive group data analysis show that there is significant difference between MAP and PP. In the responsive group, there is proof that PLR causes an increase in hemodynamic. When PLR is implemented with extremities elevated at 45°, blood from lower extremity veins as much as 500 cc to the intrathoracic compartment area (Monet, 2008). Lafanechere et al in their research (2006) concludes that PLR can predict fluid responsiveness in respondents who experience acute circulation failure (Levitov, 2011; Summers, 2010; Lamia, 2007; Caile, 2008; Benomar, 2010). The abovementioned researches take roots in a simple physiological logic that PLR facilitates RFL (rapid fluid loading) and raises venous return, stroke volume and cardiac output which is observable from the hemodynamic changes during its implementation.

The hemodynamic values before PLR and after the legs are placed in the horizontal position for responsive group do not differ significantly, thus proving that the effect of PLR on hemodynamic changes is temporary and reversible. The maximum effect of PLR towards hemodynamic occurs with the first 60-90 seconds. It decreases when both legs are returned to their original position (Monnet, Rienzo & Osman, 2006; Lafanecere, Pene & Guelenok, 2008). It is also supported by a literature study that the hemodynamic value after PLR returns to the value prior to PLR when implemented in 2-5 minutes (Monnet, Rienzo & Osman, 2006; Lafanecere, Pene & Guelenok, 2008).

The effect of endogenous rapid fluid loading fro PLR towards blood flow in aorta/cardiac output can be used to predict whether a patient is responsive towards fluid IV with the assumption that patients who experience hemodynamic increase during PLR also experience increase in hemodynamic due to fluid intravenous intake (Maizel, 2007, Levitov, 2011).

In the hemodynamic responsive group (prior to and after the fluid infusion) there is evidence that it is beneficial for respondents who during PLR show an increase in hemodynamic. It advocates researches conducted by Benomar, B., et al (2010) and Caile, Jabot, Belliard and Jardin (2008), where the responsive respondents of PLR are also responsive towards fluid infuse.

The study convey results that PLR is a method to test reversible fluid responsiveness and can be implemented on a non-traumatic shock patient. Besides fluid responsiveness, another factor a nurse should consider during fluid resuscitation on hypovolemic shock patients is age, since elderly patients with cardio-vascular structure and function deterioration along with co-morbid illness such as hypertension and a history of infarct should be provided with administration with great care. Excessive provision in this age group can lead to fluid accumulation in the lungs and worsen tissue perfusion. Senior patients are recommended to undergo diagnostic tests such as ECG before fluid is given in large volume along with rigorous intake output and the patient’s medical history such as infarct and hypertension. To maintain adequate cardiac output, a fluid challenge can be administered while waiting for the ECG results with crystalloid/colloid liquids when a PLR does not exhibit a PP increase of 9% or more. For senior patients, it is suggested that the amount of fluid is lower than younger adult patients.

Reference


Factors Contributing to Workplace’s Support to Breastfeeding Employees

1Hemi Fitriani*, 2ImamiNur Rachmawati, 3Tri Budiati
1 Nursing Science Departement. School of Health Sciences Jenderal Achmad Yani
2,3 Department of Maternity Nursing Science University Indonesia
Email : hemi.ftrn@yahoo.com

Abstract
One of the factors contributing to the low successful rate of the national exclusive breastfeeding is the lack of workplace’s supports to breastfeeding employees (Harnowo,2012). This research further investigates what factors enable to this low support. Employing the cross-sectional approach, this research involves 130 company managers selected through stratified random sampling technique. Conducted in Cimahi, this research administers Chow Questionnaire (2009) in investigating manager’s attitude toward breastfeeding. Furthermore, Pan-Asian Lactation Consultant Association (PALCA) questionnaire (2012) is administered to gauge the workplace’s support. The findings show that the company ownership, whether it is public or private, and whether or not the company operates in health sector contribute the most. The company ownership, in this sense, the public company, is proved to demonstrate the greatest influence. The government should play a great role in supporting breastfeeding program. It is recommended that the government takes part in assisting, supervising and giving penalties to any violations in attempts to support breastfeeding in workplaces.

Key words : breastfeeding, cross sectional, employees, manager, workplace’s support

Introduction
Nutritional status of children under 5 years of age needs a crucial consideration and attention due to the higher risk of diseases and death. Result of National Basic Health Research (Riskesdas) 2010 proved that the prevalence of underweight children in 2010 was high rate around 17.9%. However, the target of underweight prevalence by 2015 decreased to 15% (Kementerian Kesehatan Republik Indonesia, 2012). Governments have efforts to reduce this problem by promoting exclusive breastfeeding program. The findings show that this program contributes to the prevention of underweight problem among children (Mediana, 2011).

National target of exclusive breastfeeding program in Indonesia is 80%, but the implementation of this program is still low rate. Riskesdas (2010) approved that exclusive breastfeeding program on newborn infants until 5 month in Indonesia is only reached to 15.3% (Ministry of Health of The Republic Indonesia,2012). However, this program reached to 67.3% in West Java (Department of Health of The Republic Indonesia,2011). This condition proves that Indonesian infants have higher risk of underweight problem, disease and death. Moreover, the major concern on maternal breastfeeding restriction in Indonesia is the condition of breastfeeding employees (Weni, 2012).

Breastfeeding employees realized that workplace becomes one of the reasons they quit breastfeeding early. Furthermore, the limited time for pumping, the limitation of exclusive breastfeeding pump tools, and the lack of private space become other factors of this discontinued exclusive breastfeeding program (Coffman, 2011; Rejeki, 2004).

The numbers of employees in Indonesia increase every year. In fact, data of The National Labor Force Survey (Sakernas) show that the rate of Indonesian female employees in 2008 was 37.9% and it increased to 38.58% in 2010 (Department of Manpower and Transmigration, 2013). As breastfeeding employees grow higher, workplace can help to reduce the problem of underweight children by allocating an adequate place and time for pumping and providing the appropriate breastfeeding facilities. These strategies will be helpful for both breastfeeding employees and her infants. In this sense, the existence of workplace’s law in gaining more support to breastfeeding employees is significantly contributed to the successful of breastfeeding behavior (Chen, Wu, & Chie, 2006). In addition, the employees expect that workplace will support...
and allow them to breastfeed their newborn infants by providing the private space and pumping times (Rejeki, 2004).

The finding shows that workplace which have the appropriate breastfeeding facilities are only 10.81% while the private offices providing these facilities are 11.11% (Harnowo.2012). The low number of breastfeeding facilities at workplace will indirectly restrict the successful exclusive breastfeeding program. Another study from the other countries proved that the lack of workplace’s supports to this program is caused by lactation since many workplaces convinced that lactation makes their employees less productive, increases outcome and wastes the times. (Stewart & Glenn, 2008; Bai, Wunderlich, & Weinstock.2012). Either research mainly investigates about workplace’s support to breastfeeding employees or research concerns on managers’ attitude toward breastfeeding employees by involving company managers as the respondents have not been widely conducted in Indonesia. Therefore, the research focuses on workplace’s support to breastfeeding employees should be conducted.

This research is conducted in Cimahi which is located in West Java. In 2007, the target of exclusive breastfeeding program in this city is 56.36%, or below the specific national target. Therefore, this research is being crucial to be conducted since the numbers of employees in Cimahi as a central city of industry increase every year (Development Planning Agency at Sub National Level/ Bappeda Cimahi.2011).

The result of this research can be used as references for government in evaluating the implementation of Government Regulation of The Republic Indonesia Number 33 years 2012 on the exclusive breastfeeding at workplace, particularly in Cimahi. Likewise, the data of this research are expected to be additional information for government’s policy to reduce this crucial problem and it is expectedly will gain high support to this successful program in Indonesia, particularly in Cimahi. Whereas, the successful exclusive breastfeeding program will optimally increase the number of child health and the quality of human resources.

Methods

The research belongs to quantitative by employing cross-sectional approach. The samples of this research involve 130 company managers selected through stratified random sampling technique. The inclusion criteria of the sample are the company managers worked in unseasonal industry and hired the productive employees. Meanwhile, the exclusion criteria are those who are not willing to involve in this research. The instrument of the research is questionnaire with validity (r is calculated 0.374–0.928 > 0.3) and high reliability (reliability range is 0.612–0.932). Furthermore, the technique of data analysis are divided into frequency distribution for univariate data, chi square formula for bivariate and predictive logistic regression formula for multivariate data. The research is conducted by holding three principles of ethical research include beneficence, respect for human dignity and justice which resulted in informed consent from respondents. In addition, this research has successfully passed the ethical test by its related committee in Faculty of Nursing Science at University of Indonesia.
## Result

Table 1 The result of logistic regression analysis using backward method

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Df</th>
<th>P</th>
<th>OR</th>
<th>CI 95% Lower</th>
<th>CI 95% Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Age</td>
<td>-0.039</td>
<td>0.980</td>
<td>0.002</td>
<td>1</td>
<td>0.968</td>
<td>0.962</td>
<td>0.006</td>
<td>1.009</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>0.978</td>
<td>1.228</td>
<td>0.634</td>
<td>1</td>
<td>0.426</td>
<td>2.659</td>
<td>0.240</td>
<td>29.52</td>
</tr>
<tr>
<td></td>
<td>Company sectors</td>
<td>0.740</td>
<td>0.951</td>
<td>0.606</td>
<td>1</td>
<td>0.436</td>
<td>2.097</td>
<td>0.325</td>
<td>13.51</td>
</tr>
<tr>
<td></td>
<td>Workplace size</td>
<td>4.380</td>
<td>2</td>
<td>0.112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workplace size (1)</td>
<td>-2.450</td>
<td>1.191</td>
<td>4.234</td>
<td>1</td>
<td>0.040</td>
<td>0.086</td>
<td>0.008</td>
<td>0.890</td>
</tr>
<tr>
<td></td>
<td>Workplace size (2)</td>
<td>-0.189</td>
<td>0.961</td>
<td>0.039</td>
<td>1</td>
<td>0.844</td>
<td>0.828</td>
<td>0.126</td>
<td>5.444</td>
</tr>
<tr>
<td></td>
<td>Company ownership</td>
<td>2.553</td>
<td>1.292</td>
<td>3.813</td>
<td>1</td>
<td>0.051</td>
<td>0.080</td>
<td>0.006</td>
<td>1.009</td>
</tr>
<tr>
<td>Second</td>
<td>Constant Company sector</td>
<td>-2.056</td>
<td>1.300</td>
<td>2.500</td>
<td>1</td>
<td>0.114</td>
<td>0.128</td>
<td>0.344</td>
<td>12.98</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-0.972</td>
<td>1.219</td>
<td>0.636</td>
<td>1</td>
<td>0.425</td>
<td>2.644</td>
<td>0.242</td>
<td>28.84</td>
</tr>
<tr>
<td></td>
<td>Workplace size</td>
<td>4.444</td>
<td>2</td>
<td>0.108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workplace size (1)</td>
<td>-2.446</td>
<td>1.187</td>
<td>4.250</td>
<td>1</td>
<td>0.039</td>
<td>0.087</td>
<td>0.008</td>
<td>0.886</td>
</tr>
<tr>
<td></td>
<td>Workplace size (2)</td>
<td>-0.199</td>
<td>0.927</td>
<td>0.046</td>
<td>1</td>
<td>0.830</td>
<td>0.820</td>
<td>0.133</td>
<td>5.043</td>
</tr>
<tr>
<td></td>
<td>Company ownership</td>
<td>-2.499</td>
<td>1.142</td>
<td>4.784</td>
<td>1</td>
<td>0.029</td>
<td>0.082</td>
<td>0.009</td>
<td>0.771</td>
</tr>
<tr>
<td>Third</td>
<td>Constant</td>
<td>-2.080</td>
<td>1.151</td>
<td>3.269</td>
<td>1</td>
<td>0.071</td>
<td>0.125</td>
<td>0.396</td>
<td>35.22</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>1.318</td>
<td>1.145</td>
<td>1.326</td>
<td>1</td>
<td>0.250</td>
<td>3.737</td>
<td>0.396</td>
<td>35.22</td>
</tr>
<tr>
<td></td>
<td>Workplace size</td>
<td>5.155</td>
<td>2</td>
<td>0.076</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workplace size (1)</td>
<td>-2.564</td>
<td>1.185</td>
<td>4.684</td>
<td>1</td>
<td>0.030</td>
<td>0.077</td>
<td>0.008</td>
<td>0.785</td>
</tr>
</tbody>
</table>
Government law and regulations among exclusive breastfeeding program at workplace has not been conducted appropriately. In this case, government that should play the great role as the initiator, facilitator and motivator of 1.000 Days of Life Movement (HPK) to increase the percentage of overweight children (Menkokesra, 2013) is not able to give the optimal efforts in gaining many supports to breastfeeding employees. This inability of central government indirectly restricts the successful program of breastfeeding employees. Moreover, both public and private company still gain low support to this program.

Furthermore, government is not able to determine the penalties to workplace which defense Governmental Regulation Number 33 of 2012 about breastfeeding program at workplace. The major concerns of breaking right by the company managers toward the reproductive employees, such as the right of breastfeeding program at work is the inexistence of penalties toward law enforcement against this violation (Effendi, 2013; Bintoro, Ardhanariwari dan Permana, 2013). Moreover, this inexistence gives many opportunities for company to defense the rights of the employees. In fact, the company will freely to disallow and defense the law and regulation for breastfeeding employees resulting in law negligence and low workplace’s supports to exclusive breastfeeding program.

Hojnacki (2010), reveals that the company focused on both health and non-health sectors contribute to workplace’s supports to breastfeeding employees. However, the companies focused on health sectors have 4,314 times of opportunities in supporting breastfeeding employees than non-health sectors. Winardi (2004) stated that people’s behaviors are basically oriented to their goals (Silaniherlina, 2012). It means that the company on health sectors is oriented to public health services. Government Law Number 33 of 2009 article 48 verse 1 stated that health care contributes to the implementation of health efforts by government. Furthermore, exclusive breastfeeding program is aimed to reduce the problem of underweight children and the company focused on health sectors is contributing the most to this program. This sector implements the specific programs of the government’s policy for improving children’s nutrition in Indonesia. One of the programs is promoting exclusive breastfeeding program (Coordinating Ministry for People Welfare of the Republic Indonesia [Menkokesra], 2012). In addition, health company’s sectors play the great role to gain more supports to exclusive breastfeeding program and breastfeeding

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Df</th>
<th>p</th>
<th>OR</th>
<th>CI 95% Lower</th>
<th>CI 95% Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>Workplace size</td>
<td>-0.047</td>
<td>0.897</td>
<td>0.003</td>
<td>1</td>
<td>0.958</td>
<td>0.954</td>
<td>0.164</td>
<td>5.533</td>
</tr>
<tr>
<td></td>
<td>Company ownership</td>
<td>-2.708</td>
<td>1.120</td>
<td>5.847</td>
<td>1</td>
<td>0.016</td>
<td>0.067</td>
<td>0.007</td>
<td>0.599</td>
</tr>
<tr>
<td></td>
<td>Constant Workplace size</td>
<td>-1.988</td>
<td>1.130</td>
<td>3.097</td>
<td>1</td>
<td>0.076</td>
<td>0.137</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forth</td>
<td>Workplace size</td>
<td>-2.444</td>
<td>1.171</td>
<td>4.356</td>
<td>1</td>
<td>0.037</td>
<td>0.082</td>
<td>0.009</td>
<td>0.862</td>
</tr>
<tr>
<td></td>
<td>Workplace size</td>
<td>0.039</td>
<td>0.879</td>
<td>0.002</td>
<td>1</td>
<td>0.964</td>
<td>1.040</td>
<td>0.186</td>
<td>5.819</td>
</tr>
<tr>
<td></td>
<td>Company ownership</td>
<td>-2.902</td>
<td>1.109</td>
<td>6.844</td>
<td>1</td>
<td>0.009</td>
<td>0.55</td>
<td>0.006</td>
<td>0.483</td>
</tr>
<tr>
<td></td>
<td>Constant Workplace size</td>
<td>-0.984</td>
<td>0.598</td>
<td>2.706</td>
<td>1</td>
<td>0.100</td>
<td>0.374</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
employees since this program is appropriate to the goal of company in providing public health service.

Data shows that all of respondents’ characteristics include middle-aged employees, marriage, children, high educational background, upper company manager, good knowledge and attitude still gain low workplace’s support to breastfeeding employees. It proved by Kurt Lewin theory (1970) which states behavior is the balanced condition of driving forces and restraining forces (Silanicherlina, 2012). Furthermore, the factors contributing the most to workplace’s supports to breastfeeding employees are female middle-aged company managers who got married and have children. Many of them are upper managers who were graduated from high educational background, so they have good knowledge and attitude toward exclusive breastfeeding program at work. Mean while, workplace has not yet supported breastfeeding employees since both of the contributed factors and retraining factors of the company are not stabilized.

The research found that there are the other retrain factors exist in contributing workplace’s supports to breastfeeding employees. These factors include the perception and value of the organization (Rahmani, 2012). In this case, workplace gives a negative perception of lactation program for breastfeeding employees. As it stated by vice of General Secretary of Indonesian Young Entrepreneurs Association (Apindo), Frangky (2011); Government Draft Regulation (RPP) oriented to exclusive breastfeeding causes the implication of high cost economics, disruption on business and low industrial competitiveness (Hukum online, 2011). All of these perceptions prevent to gain more workplace’s supports to breastfeeding employees.

In this sense, workplace should realize that the actual advantage of lactation program is decreasing employees’ absences because of sick children. Furthermore, it decreases the turn-over rate of female employees resulted in reducing the cost training of new employees (Fall, 2006). In this case, educational program play the role to change a negative into a positive perception. Thus, it indirectly reduces the restricted factors and changes the company managers’ knowledge and attitude toward breastfeeding employees.

Another retrain factors is workplace’s values. Workplace oriented to high financial and achievement targets will decide to disallow exclusive breastfeeding program since this program will restrict to company’s objectives. As a result, this negative value belongs to the second reasons of low workplace’s supports to breastfeeding employees.

Verschoor stated that the characteristics of organizations’ must hold the valuable vision, mission and values as their basic guidelines (Susanto, 2006). In this case, the crucial values are prioritizing the most important public interest than individual or group. Workplace which holds these principles will prioritize to consider the benefit of lactation program beside concern on its negative effect. In fact, this program produces the high income as well as the high quality of the company. These condition are resulted by three main points include providing exclusive breastfeeding program and its facilities, helping government to improve the percentage of overweight children and increasing the quality of human resources.

Furthermore, government plays the great role to change the perspective of company managers in making straight vision concerning on health issues. Therefore, they can reach the target of exclusive breastfeeding program at workplace. Indonesian Law Number 36 of 2009 article 18 on health stated that government shall be responsible for empowering and encouraging active participation of the people in any form of health efforts (Ministry of Health of Republic Indonesia, 2009).

In addition, another factor of low workplace’s supports to breastfeeding employees is low of supervision and inexistence of the penalties for law negligence toward exclusive breastfeeding program at workplace (SPMSTRANAS, 2013). Moreover, underweight children problem has not clearly been solved since the existence of penalties for WHO Code violation about Breast Feeding already promoted in 2012.
References


Chow, F., T. Development of an instrument designed to measure manager attitudes toward workplace breastfeeding support. 2011. Thesis. UMI. 1471842


Rejeki, S. (2004). *Pengalaman menyusui ibu bekerja di daerah kendal jawa tengah.* Diunduh dari lontar.ui.ac.id


Effect of Community-Based Education to Foot Care Behavior among Type 2 Diabetes Mellitus Patients in Bandung, West Java Province, Indonesia

1Citra Windani Mambang Sari*, 2Ahmad Yamin
Faculty of Nursing, Universitas Padjadjaran,
*Email: citra.windani@unpad.ac.id

Abstract
Foot care behavior is a very important component in preventing diabetic foot. Patients with diabetes mellitus lack of knowledge and self-efficacy about foot care behavior so that the behavior of foot care less can be realized. The implementation of community-based foot care program for patients with diabetes mellitus directed to improve the behavior of the patient's foot care. Integrated community involvement in the program, so that patients have a social support system to perform foot care behavior. The purpose of this study was to determine the effect of a community-based foot care programs to foot care of patients with diabetes mellitus. The research method using a quasi-experimental design used is a pre-test and post-test with control group design. A total of 37 patients as the intervention group and 42 patients as a control group purposively selected from the patient population highest Type 2 Diabetes Mellitus in 10 Primary Health Care in Bandung. The intervention group received care educational program of cadres had been trained. Kader conduct health education and counseling in the intervention group in the first week and focus group discussion on the second and third weeks. Foot care measured by the modified NAFF (Nottingham Assessment of Functional Foot Care) that comprised six dimensions: foot inspection, foot hygiene, toenails care, footwear, and foot injuries and management of foot injury. Furthermore, the data were analyzed using paired and independent t-test. There are differences in the average foot care before and after community-based education program. The post-test foot care behavior in intervention group (M=75.73, SD =11.46) was significantly higher compared to the pre-test score (M=44.19, SD =10.82). Meanwhile, in control group, there was a decreased of behavior scores at the post test (pre test M=44.67, SD =12.56; post test M=46.19, SD =13.71). Foot Care educational-based program is expected to improve the behavior of foot care in patients with diabetes mellitus and lower the risk of diabetic foot. Nurses can integrate educational programs foot care based perkesmas program to the community in an effort to prevent the recurrence of diabetic foot.

Key words: community-based, diabetes mellitus, education, foot care.

Introduction
Diabetes mellitus is one of the increasing of chronic diseases in the world. International Diabetes Federation notes that by 2015 there are 415 million adults in the world who suffer from diabetes mellitus. Data for the year is expected to increase to 642 million people who will have diabetes mellitus by 2040 (IDF, 2015). Approximately 90-95% of the population of diabetes experienced the incidence of diabetes mellitus with type 2 (NIDDM), the type of diabetes mellitus caused by the disturbance of secretion and insulin hormone resistance (Centers for Disease Control and Prevention, 2014).

Indonesia is ranked seventh in the world for the highest prevalence of diabetes after China, India, the United States, Brazil, Russia and Mexico (IDF, 2015). In 2013 there are about 12 million people who have diabetes mellitus and only 3 million people are diagnosed (Pusdatin Kemenkes RI, 2014). Based on Riskesdas (2013), the prevalence of diabetes mellitus in Indonesia increased from 1.1% to 2.1% compared to 2007. Similarly, in West Java province also experienced an increase in prevalence from 1.4% in 2007 to 2% in 2013 and has the highest number of people who actually feel the symptoms of diabetes mellitus, but not yet examined that is about 225 thousand people (Riskesdas, 2013). The city of Bandung as the capital of the province is one of the big cities that have the potential to
increase diabetes mellitus disease, where the disease is included in the top 10 disease patterns of patients most hospitalized in the Hospital (Profil Kesehatan Kota Bandung, 2015).

One of the complications of diabetes mellitus is diabetic foot. Diabetic foot is an infection or tissue damage associated with neurological disorders and impaired blood flow to the legs (Boulton, Armstrong & Albert, 2008). Disorders of the nervous system and the peripheral blood flow interruption is this which is the onset of diabetic foot (diabetic foot). Factors that lead to diabetic foot include peripheral neuropathy, vascular abnormalities, poor glycemic control, repetitive trauma, and abnormal anatomical structure of the foot (Adhiarta, 2011). Peripheral neuropathy and peripheral angiopathy, and minor trauma can cause ulcers in patients with diabetes mellitus. Lack of knowledge of the client and the public become ulcers get worse and may become gangrenous (Waspadji, 2007). Therefore there is need for ulcer prevention and treatment of diabetes mellitus is by foot care.

Research on foot care education programs have been conducted with a lot of measurement results with the aim of increasing self-efficacy in patients. All the research done on the individual patient with a hospital setting (Vatankhah et al, 2009 and Kurniawan et al, 2011), at home (Lincoln et al, 2008 and Sari et al, 2012). Of the four studies only Sari et al (2012) that involve the family in doing foot care education. It's just that no one has studied how the behavior of foot care in patients with Diabetes Mellitus involving the community. According to Friedman (2010), the community can be involved as a target of foot care education for the community can be a driving force as other community members to perform a behavior. Community involvement in the foot care education are expected to appear confident in doing foot care, as members of the community can be a reminder and support to patients. Foot care education is also very important to involve the community to the other members of the community, given Diabetes mellitus is a hereditary disease that pose a risk to other members of the community. In addition, diabetes mellitus is a chronic disease that decreases the ability of the patient, so that if the community is involved in this educational program, communities can help conduct foot treatment in patients when the patient's condition began to deteriorate.

The purpose of this research is to identify the effect of community-based education program to foot care behavior in patients with diabetes mellitus in Bandung.

Method
The study design is a quasi experimental study design using two groups of intervention and control groups were performed pre-test and post-test in each group. The study population was patients with diabetes mellitus in Bandung. The criteria for inclusion in this study were (1) the client with age> 20-70 years and live with the community, (2) has been diagnosed with type 2 diabetes by a physician, (3) be able to write, read and speak Indonesian. The sampling technique in this research is by using purposive sampling in accordance with the inclusion criteria. The samples in this study are patients with diabetes mellitus, which are grouped into a control group and intervention group based health centers Bandung, West Java, Indonesia. Working areas Public Health Center are Pasir Kaliki, Pasundan, Ramdan, Garuda, Sarjadi, Arcamanik, Ujung Berung Indah, Ibrahim adje, Babakan Sari and Babakan Surabaya. The research was done by conducted focus group discussion. Research tool was researcher-made by modified in two parts. The first part was used to assess demographic data such as age, sex, marital status, job, education, history of smoking, duration of diabetes, foot symptom, comorbid disease, BMI. The second part, Instrument for measuring foot care behavior using modification questionnaire Kurniawan et al (2011) which has been translated into Bahasa Indonesia and modified in Sari, et al (2012). There are 3 questions that are added about the prevention of foot injuries include foot exercises, smoking and folding feet. The number of questions as many as 31 with 4 choices of answers that is every day, often, rarely and never. Component questions on the instrument include checking the foot, keeping foot clean, foot nail care, footwear selection, injury prevention and management of foot injuries. The results of validity of foot care behavior with the lowest score of 0.39 and the highest score 0.86. The reliability test result is 0.74.

Higher score indicate the better about foot care behavior. Data were analyzed by descriptive statistics, paired t-test and independent t-test.

The data collection is divided into two phases: training of cadres or community representatives who want to become volunteers. The second stage is the process of collecting data in patients with diabetes mellitus. The study used primary data source is data taken directly from the respondents. Implementation of community-based foot care education program was held on 8-10 respondents belonging to the intervention group in the study. The intervention group consisted of
6 groups. The program consists of 4 weeks. Before community-based education foot care program starts, pre-test done. As baseline, the respondents were gathered in one place. Cadres leads a discussion on the behavior of foot care done before. Then cadres provide community-based education about foot care behaviors including risk factors and how to clean feet, and nail care, prevention of injuries. In the first week of meeting, the cadres teaches how to perform foot care and asks if there are obstacles in performing foot care and also reviews what the respondent has done for a week about foot care. At the second and third meeting, the cadres conducted a home visit and asked the respondent whether the obstacles in performing foot care. Fourth week was conduct Focus Group Discussion and then post-test.

**Result**

**Table 1 Frequency Distribution Analysis and Homogeneity Test Characteristics of Respondents on intervention group and control group in Bandung the study period from September to November, 2016 (N = 79)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Control (n=42)</th>
<th>Intervention (n=37)</th>
<th>X²</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 – 59 years</td>
<td>18 (45)</td>
<td>18 (50)</td>
<td>0.190</td>
<td>0.818</td>
</tr>
<tr>
<td>60 – 69 years</td>
<td>22 (55)</td>
<td>18 (50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13 (31)</td>
<td>6 (16)</td>
<td>2.339</td>
<td>0.187</td>
</tr>
<tr>
<td>Female</td>
<td>29 (69)</td>
<td>31 (84)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>2 (5)</td>
<td>1 (3)</td>
<td>0.127</td>
<td>1.000</td>
</tr>
<tr>
<td>Married</td>
<td>33 (79)</td>
<td>24 (65)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>7 (17)</td>
<td>12 (32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sundanese</td>
<td>34 (81)</td>
<td>31 (74)</td>
<td>0.699</td>
<td>0.712</td>
</tr>
<tr>
<td>Javanese</td>
<td>8 (19)</td>
<td>6 (16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does no work</td>
<td>28 (67)</td>
<td>29 (78)</td>
<td>0.519</td>
<td>0.950</td>
</tr>
<tr>
<td>Labor</td>
<td>6 (14)</td>
<td>2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil</td>
<td>2 (5)</td>
<td>2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private employee</td>
<td>2 (5)</td>
<td>2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self employee</td>
<td>1 (2)</td>
<td>2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3 (7)</td>
<td>0 (0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>1 (2)</td>
<td>0 (0)</td>
<td>0.639</td>
<td>0.808</td>
</tr>
<tr>
<td>Elementary</td>
<td>17 (41)</td>
<td>18 (49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>10 (24)</td>
<td>12 (32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>11 (26)</td>
<td>7 (19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>3 (7)</td>
<td>0 (0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: a = Chi-Square, b = Kolmogorov-Smirnov

Based on Table 1, the majority of subjects in the intervention group (50%) and the control group (55%) age range of 60-69 years, with the female gender in the intervention group (84%) and the control group (69%) and married status in the intervention group and the control group are married. Almost all respondents in the intervention group (81%) and the control group (74%) are Sundanese. Most respondents in the intervention group (74%) and the control group (61%) did not work. The education level of the majority of
respondents in the intervention group (49%) and the control group (41%) were elementary school. This implies that all variables in the intervention and control groups are homogeneous.

Table 2 Frequency Distribution Analysis and Homogeneity Test Clinical characteristics of respondents in intervention group and control group in Bandung the study period from September to November, 2016 (N = 79)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention (n = 42)</th>
<th>Control (n = 37)</th>
<th>$X^2$</th>
<th>$P$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>9 F 21 %</td>
<td>7 F 19 %</td>
<td>1.016b</td>
<td>0.253</td>
</tr>
<tr>
<td>Walking</td>
<td>31 F 74 %</td>
<td>25 F 68 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gym</td>
<td>1 F 2 %</td>
<td>0 F 0 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>1 F 2 %</td>
<td>5 F 13 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking history</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>25 F 60 %</td>
<td>31 F 84 %</td>
<td>1.067b</td>
<td>0.197</td>
</tr>
<tr>
<td>Ever smoked but had stopped</td>
<td>8 F 19 %</td>
<td>2 F 5 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still smoking</td>
<td>9 F 21 %</td>
<td>4 F 11 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34 F 81 %</td>
<td>31 F 84 %</td>
<td>1.108a</td>
<td>0.777</td>
</tr>
<tr>
<td>No</td>
<td>8 F 19 %</td>
<td>6 F 16 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-morbid disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>30 F 71 %</td>
<td>24 F 65 %</td>
<td>0.392a</td>
<td>0.630</td>
</tr>
<tr>
<td>No</td>
<td>12 F 29 %</td>
<td>13 F 25 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes history</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3 years</td>
<td>21 F 50 %</td>
<td>21 F 57 %</td>
<td>0.240a</td>
<td>0.656</td>
</tr>
<tr>
<td>&gt; 3 years</td>
<td>20 F 50 %</td>
<td>16 F 43 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: a = Chi-Square, b = Kolmogorov-Smirnov Z

Table 2 illustrates the clinical characteristics of the respondents. The majority of respondents control group (50%) and the intervention group (57%) had diabetes ≥ 3 years old. Sports are run by most of the intervention group (74%) and the control group (68%) is walking distance. Most of the intervention group (84%) and the control group (60%) had never smoked. Based on table 2, all respondents had never received any education program Diabetes Mellitus. Most of the intervention group (84%) and the control group (81%) have a complaint neuropathy such as numbness. Most of the intervention group (65%) and the control group (71%) had concomitant diseases other than diabetes mellitus disease. Almost entirely from both groups had high blood sugar at the time of inspection. Based on table 2, we can see the results of the homogeneity test at 6 variables showed a value of $p > 0.05$. This implies that 8 of these variables in the intervention and control groups are homogeneous.
Table 3. Test of Mean Differences Foot care of respondents about Diabetes Mellitus before and after intervention in Control group

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Control Group</th>
<th>T</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Mean (SD)</td>
<td>After Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>Foot Care Behavior</td>
<td>44.67 (12.56)</td>
<td>46.19 (13.71)</td>
<td>-0.998</td>
</tr>
</tbody>
</table>

Note: t = paired t-test, df=41

Mean value of foot care behavior before intervention in the control group was 44.67 (12.56) and after intervention 46.19 (13.71). The mean value of respondents’ care behavior in the control group did not change significantly (p = 0.324).

Table 4. Test of Mean Differences Foot care of respondents about Diabetes Mellitus before and after intervention in Intervention group

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Intervention Group</th>
<th>T</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Mean (SD)</td>
<td>After Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>Foot care behavior</td>
<td>44.19 (10.82)</td>
<td>75.73 (11.46)</td>
<td>-15.61</td>
</tr>
</tbody>
</table>

Note: t = paired t-test, df=36

The mean value of foot care behavior before intervention in the intervention group was 44.19 (10.82) and after intervention 75.73 (11.46). The mean value of respondents’ foot care behavior in the intervention group showed significant change (p = 0.000).

Table 5 Tests Differences Average behavior of foot care in Respondents about foot care behavior before and after intervention in the control group and intervention

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Control Group</th>
<th>Intervention Group</th>
<th>T</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>44.67 (12.56)</td>
<td>44.19 (10.82)</td>
<td>0.180</td>
<td>0.858</td>
</tr>
<tr>
<td>After</td>
<td>46.19 (13.71)</td>
<td>75.73 (11.46)</td>
<td>-10.31</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: t = independent t-test, df=78

Mean of foot care behavior in the control group was before intervention 44.67 (12.56) and after 44.19 (10.82). While in the intervention group before intervention 46.19 (13.71) and after intervention was 75.73 (11.46). The mean of foot care behavior before intervention in both groups was not significantly different (p = 0.858). The mean value of foot care after intervention was significant (p = 0.000).

Discussion

This research is the application of a model application of health education in community-based education program has been conducted by researchers in accordance with the underlying theory, which the researchers involved in the process of educating the cadres role given to patients assisted by investigators. The role of the nurse as a diabetes educator is one area of community nursing specialties that have a role as an instructor of health education in managing diabetes.
independently one of them to prevent the occurrence of diabetic foot. Task nurse diabetes educator is (1) to provide health education on self-management and periodic basis, (2) a behavioral intervention, (3) counseling and coaching the management of diabetes independently (Mensing et al, 2007).

This study was strengthened by the results of research Jack et al (2004) found that interventions Diabetes Self-Management Education (DSME) using methods, guidance, counseling and behavioral interventions can improve knowledge of diabetes mellitus and improve the skills of individuals and families in managing Diabetes mellitus. The involvement of volunteers in the control of self-care respondents also have an important role in alerting and improve the knowledge, self-efficacy and self-care respondents. In addition, the modules have been given to the respondent, so the respondent can reread again with family. This makes the process of discussion among families, volunteers and responders. The discussion process is that adding and updating knowledge and information from respondents about foot care. The information is part of the power to change the attitudes of individuals who will open one's mind through reasoning, thinking and deeper understanding (Sarafino, 1998).

Foot care behavior in Diabetes Mellitus patient is very important in preventing the occurrence of diabetic foot. There are several things that can improve the behavior of foot care in Diabetes Mellitus patients after family-based foot care education program is done. Some of these are 1) the basis of family-based foot care education programs, 2) educational methods, 3) motivation of cadres, 4) active involvement of the respondents, 5) follow-up of the program. First, the foundation of a family-based foot care education program is sustained by the Interaction Model of Client Health Behavior adapted from Corbett (2003). In addition, the basis of this study is in accordance with previous research that the foot care education program can improve the behavior of foot care patients Diabetes Mellitus (Corbett, 2003; Lincoln et al, 2008; Vatankhah et al., 2009; Kurniawan et al., 2011). Previous studies have reported improvements in foot care behavior at 5 weeks (Kurniawan et al, 2011), 6 and 12 weeks (Corbett), 6 months (Vatankhah et al), 12 months (Lincoln et al) after the intervention. The results of this study can improve the self-care behavior of Diabetes Mellitus patients only 4 weeks after the intervention of community-based foot care education program performed (Sari et al, 2013).

Second, the community-based foot care education program is conducted on Diabetes Mellitus patients using educational materials that are modules that contain about the behavior of foot care with images. According to Sudiharto (2007), the provision of informative and interesting educational materials, as a very strong supporter in providing education. An attractive foot care education material will enhance and stimulate patients and to ask questions and the time required to provide health education is also shortened. Several studies have previously reported that the use of modules during an effective health education session improves knowledge and behavior at 5 weeks (Kurniawan et al, 2011) and at 6 months (Vatankhah et al, 2009). Respondents are given modules that can be read at any time either by the respondent himself and the family at home. In addition, after being given foot care education by cadres, respondents were directed to take decisions to plan foot care behaviors in accordance with the abilities of the respondents.

In addition, in the module there is a self-report about foot care that is filled by respondents or family of respondents if they have undergone foot care. Self-report was made by the researcher so that the respondent can raise awareness to do the foot care although not directly supervised every day by the researcher. The filling of self-report is facilitated by the researcher, so the respondent only gives tick mark on the appropriate foot care behavior column.

Third, the motivation of cadres and respondents increases the behavior of foot care to the respondents. The support system of Diabetes Mellitus patients has an important role in improving foot care behavior. One of the basic supporting factors that can enhance individual capability is family support (Orem, 2001). The results of previous studies that make evidence that there is influence of cadre support toward behavioral independence level of Diabetes Mellitus patient (Sari et al, 2013).

Fourth, the active involvement of Diabetes Mellitus patients and families at each intervention contributes to improved foot care behavior. Patients have the opportunity to ask, exchange ideas between family members, patients and researchers at each phase of the intervention. This can build a patient's commitment and confidence in performing foot care behaviors. In addition, this family-based foot care education program allows patients to freely express things that are an obstacle in foot care behavior. Previous research results reported that the active involvement of respondents resulted in better foot care behavior (Kurniawan et al, 2011).
Conclusion

Foot Care educational-based program is expected to improve the behavior of foot care in patients with diabetes mellitus and lower the risk of diabetic foot. Nurses can integrate educational programs foot care based perkesmas program to the community in an effort to prevent the recurrence of diabetic foot.

References


Is Social support a key factor influencing depressive symptoms among older adults Living in Cimahi, West Java Province, Indonesia?

Sunanta Thongpat, Kiki Gustryanti*, Sonthaya Maneerat
1,3 Boromarajonani College of Nursing, Nopparat Vajira affiliated Kasetsart University, Thailand
2 Stikes Jenderal A. Yani Cimahi, Indonesia  
*E-mail: kikye_21@yahoo.co.id

Abstract
Depression is a major factor in late life suicide among older adults. A factor contributing to depressive symptoms among older adults who live in Cimahi is social support, which has been found to influence depressive symptoms. However, the association between social support and depressive symptoms in this population is still unclear in Cimahi, West Java Province, Indonesia.

Objective: This study aimed to describe depressive symptoms and social support of older adults and to examine the relationship between social support and depressive symptoms among older adults living in Cimahi, West Java Province, Indonesia. A cross sectional design was used in this study. Participants were selected from 13 primary health centers in Cimahi using multi stage sampling method. A total of 243 older adults were recruited. Data were collected by questionnaires which were the socio-demographic data, Geriatric Depression Scale -15 and The multidimensional Scale of Perceived Social Support. Self-administered questionnaire was used to collect data. Descriptive statistics and Chi-square method was used for analysing data. The finding indicate that depressive symptoms of older adults were majority at a normal level (56.2%). Furthermore, 25.09% of older adults were found to have mild depressive symptoms. The mean of the social support factor for older adults was 52.8% received high social support. The results of this study found that social support of older adults living in Cimahi, West Java Province, Indonesia is significantly correlated with depressive symptoms ($\chi^2 =28.976, p < .01$). Community nurse should consider the effects of social support on depressive symptoms in the older adults. Relevant program at primary health centers should include this factor to alleviating depressive symptoms in older adults.

Key words: Depressive symptoms, older adults, social support.
The Influence of Playdough On the development fine motoric of Preschool age at Nurul Iman Kindergarten in Cimahi

Rini Mulyati*, Setiawati, Bambang Wicaksono
1,2,3 Stikes Jenderal Achmad Yani Cimahi
*Email: tesarafkhani@yahoo.com

Abstract
Preschool age which is part of early childhood is a crucial stage of life in terms of a child's physical, intellectual, emotional and social development. Physical development refers to the advancements and refinements of motor skills. These advancements are evident in gross- and fine-motor skills. Fine motor skills involve the control of small muscles in the hands, feet, fingers, and toes. Fine motor skills can be stimulated by playing with play dough that includes kneading, rolling, molding, which can help strengthen their upper arm muscles, hands and fingers. Based on preliminary studies conducted at kindergarten Nurul Iman Cimahi, some students have not been able to perform some fine motor tasks that correspond with their age.

This research adopted Quasy Experiment method with one group pre-test and post-test design. Twenty nine pre-school age (4-6 years) children took part as samples, with purposive sampling method implemented. This research was carried out for a period of 30 minutes, 3 times in a week by involving the respondents in playing with playdough activity. From bivariate analysis using Wilcoxon test, it is revealed that p value was <0.05, indicates that there is an effect of playing with play dough on fine motor skills development in pre-school age children at Nurul Iman Cimahi Kindergarten.

It is suggested that teacher integrating playing with educational toys in their teaching learning process to enhance fine motor development of pre school age children at Nurul Iman Kindergarten, Cimahi.

Key words: Pre School Age, fine motor Development, Playdough

Introduction
Preschoolers are early childhood with a sensitive period and a very important period for child development. This age has the development of child sensitivity, especially the sensory function, therefore, the children need to be optimally stimulated by parents and the environment through exploitation and learning activities. The developmental tasks must be achieved by pre-school by developing of motor skills both gross motor and fine motor involving large muscles and coordination of small muscles with eyes and hands respectively (Yusuf Syamsu, 2007). The development of fine motor is one of the most important factors in the development of the individual lead to impact on aspects of overall development (Soetjaningsih, 1995 in Yuniarti, 2015).

Good motor adaptive related to the child's ability to observe things, perform movements involving specific body parts and small muscles, require careful coordination, and do not require much energy for example inserting beads into bottles, sticking, cutting etc. (Susilaningrum, 2013). The matur of fine motor can be achieved by performing various activities involving motor activity. This motor maturity motivates the child to perform motor activities in a broad scope of physical activity continuously both involving rough and fine motor (Jamaris, 2006). The fine motor of the child can be developed optimally through directed stimulation.

Fine motoric that are continuously stimulated in preschoolers are required during school periods such as drawing, holding spoons and writing. When children develop fine motor skills will affect other developments such as language, social skills, and
confidence. In addition, this can encourage independent attitude of children that lead to complete their duties without depend on others (Mansur, 2011). Stimulation for fine motor can be done through a variety of games including playdough.

Playdough is one of the educational game tools that is safe and not harmful for children and lead to stimulate fine motor development. Playdough include activities such as squeezing, rolling, and printing various forms with the creativity of children, therefore, children not only gained pleasure, but also can enhance the sensory function and imagination of children. In addition, This can be strengthen upper arms and the muscles of the palms of the hands and fingers (Yuniarti, 2015). This is reinforced by research Rahmawati (2014) that playdough can give effects to improve fine motor ability child of medium tunagrahita year 1 in SLB Sekar Teratai 1 Srandakan. Furthermore, the research of Difatiguna (2015) there is influence playdough activity using playdough on fine motor ability in child age 4 to 5 years in kindergarten Dharma Wanita Subdistrict of pesisir utara in West Pasir.

Playdough has many benefits for pre-school age children to train motor sensory ability, to know something object through touch, to learn about texture and how to create something with own creations and without any rules (Ali.N.R, 2016). According to Sari (2015) there is influence playdough to enhance creativity of children aged 5 to 6 years in Al-Azhar Kindergarten 1 Bandar Lampung. This can be evidenced by the ability of children to make shapes, make color combinations, and the ability of children to experiment.

In order to achieve its development to be developed in accordance with what is expected, children need a good stimulus from adults around him, especially parents, because it is undeniable that parents who spend much time with children and the first education obtained by children. Therefore, if parents are not appropriate to provide stimulus in children then it is feared aspects of child development can not develop optimally. In addition to parents, the role of teachers is very important in helping to develop aspects of child development, because in the School teacher is a substitute figure of parents who can be used as a model for children and can help children to develop aspects of its development. In an effort to help children, teachers should be able to create a learning environment that is fun for children and can stimulate child development, especially fine motor development.

Wong (2009) argues that the motor skills of children are said to be late, when the children should have been able to develop new skills, but he showed no progress. For instance, the children of school age about 6 years old have not been able to use stationery properly and correctly. Children who experience delays fine motor development, have difficult to coordinate hand movements and fingers flexibly. Also, Permendiknas No. 58 (2009) confirmed that in the age range of 4-5 years should be able to do activities related to fine motor including "Creating a vertical line, horizontal, curved, plagiarized, doing activities related to eye and hand, coordination to perform complex movements, performing manipulative movements to produce a form by using various media and expressing themselves by working art using various media ".

In fact, the result of observation conducted in kindergarten Nurul Iman with 47 children consisting of 4 classes with 13 children class A aged 4-5 years, 9 children B2 aged 6 years old, 13 children of B3 aged 5-6 years old, and 12 children of grade B4 aged 4-5 years old. The result has found that 14 children have still not optimal of using fine motor development for example the way holding pencil and irregular coloring way, unable to make a straight line well, can not cut neatly, and unable to stick the paper neatly. Playdough is one of the games that can be an alternative to optimize fine motor in Nurul Iman kindergarten because this game activity consists of squeezing, rolling & printing various forms with their own creations & capabilities that can strengthen upper arm, palm muscles and his fingers.
Delaying of fine motor development can cause deviation of growth and even can be interference inhibition of fine motor development, which is the based of children to enter school age.

Discussion

The results of the study are presented in table in accordance with the objectives of the study.

1. Univariate Analysis

a. Fine Motoric Development of Preschoolers before Intervention

<table>
<thead>
<tr>
<th>Variabel</th>
<th>N</th>
<th>Mean</th>
<th>Median (min-max)</th>
<th>Standar Deviasi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of fine motor aged 4-6 years old</td>
<td>29</td>
<td>2.90</td>
<td>3.00 (1-5)</td>
<td>0.939</td>
</tr>
</tbody>
</table>

In table 1 above shows that respondents aged 4-6 years (N = 29) obtained a mean value of 2.90 & median value 3.00, minimum value 1 and maximum value 5 with a standard deviation of 0.939.

Based on the result of the research that respondents aged 4-6 years (pre-school) based on observation result of modification of DDST and KPSP showed in pre test stage from 29 respondents obtained 24 respondents (82.8%) not appropriate of fine motor development and 5 respondents (17.2%) appropriate of fine motor development. According to Adriana (2011), developmental delays can be caused by internal factors and external factors. One of the external factors that can impact on fine motor development is stimulation. This stimulation is greatly influenced by the initial time of stimulation; how long and how to do it.

Based on the result of data collecting conducted by observation of 4 years old, 2 respondents from 9 respondents who are able to follow questionnaire command that is putting 8 pieces of cube one by one above others without dropping cube but the children can not follow to draw circle, make a longer line, form of drawing added, drawing 3 parts of people. 5 years old only 2 respondents from 10 respondents who are able to follow command of drawing people with 6 parts but can not follow to point the longer line, drawing plus sign and rectangular shape. Furthermore, the age of 6 years can not follow the order of observation sheet, only 1 respondent from 10 respondents who can follow command to draw rectangle 4 and choose a longer line but most of them can not follow drawing 3 body parts and 6 body parts.

The result of pre test conducted by using observation sheet from DDST and KPSP modification of children aged 4-6 years have not reached 100%. The delay of development of fine motor can occur due to lack of training or stimulus in the school environment and provision of educational media as well as facilities and learning processes in schools. Furthermore, home environment that lack the educational game tools to enhance development of fine motor, can lead to lack fine motoric. By encouraging parents to do the stimulation and always accompany the child during fine motoric development directed regularly, the children can be confident and growth at the next age (Wong, 2009). Educational game media is an excellent stimulation to optimize the fine motoric development of children such as playdough.

This is supported by research Suryameng (2016), the playdough method can improve the fine motor skills of 14 respondents with 57.1 % pre-intervention and 93% obtained post intervention. The development of fine motoric should be achieved in every child development their age. The stimulation factor is important for both fine motor
and growth of the children. Children who directed stimulation will quickly develop compared to children who are less / not getting stimulation (Soetjiningsih, 2012). The more stimulation given, the knowledge of the children becomes broader that lead to optimal the child's development.

**b. Fine Motoric Development of Preschoolers after Intervention**

Table 2. Smooth Motoric Progress In Pre-School Children After Playdough Intervention

<table>
<thead>
<tr>
<th>Variabel</th>
<th>N</th>
<th>Mean</th>
<th>Median (min-max)</th>
<th>Standar Deviasi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of fine motor in aged 4-6 years old</td>
<td>29</td>
<td>4.28</td>
<td>4.00 (3-5)</td>
<td>0.591</td>
</tr>
</tbody>
</table>

In table 2 above shows that respondents aged 4-6 years (N = 29) obtained mean value 4.28 & median value 4.00, minimum value 3 and maximum value 5 with standard deviation 0.591.

The research in Table 4.2 shows that from 29 respondents using DDST modification observation sheet and KPSP, the average of fine motor development after being given playdough intervention is 4.00 means categorized in fine motor development of 4-6 years old. Playdough is one of safe educational tools for pre-school children and can optimize children's development especially fine motor development and gives impact to children's physical, linguistic, cognitive and social development (Soetjiningsih, 2012).

The results of this study was supported by Ali (2016), that playdough is one type of child play that is beneficial for the development of brains and fine motor of pre-school age. Playing a playdough is directed to create something fun with his own creations and abilities. Playdough is a useful game for the ability of imagination, creativity, language skills and emotional social children.

The result of data collecting by giving educational game playdough, the ability of respondents in fine motor development has increased (93.2%) of 29 respondents; 27 respondents has experience improvement in fine motor development and only 2 respondents (6.9%) is not appropriate of development fine motor. This is due to factors such as lack of stimulation at home and parental assistance at the time of children practicing at home. Furthermore, the observation results obtained that Children aged 4 years still not able to draw people with 3 parts of the body.

The development of fine motor aspects stimulated through playdough that indirectly stimulates other aspects of development including interacting with their friends, conveying work, and showing to friends and teachers that they can make something in accordance with the wishes of children or teachers. This atmosphere is a very fun atmosphere for children to become more thinking, imagining, and increasingly independent. According to Soetjiningsing (2012) playing playdough makes children more creativity, improving the skills of small muscles, better adapting to stress and more responsible for the task given.

This is supported by research conducted by Arlinah (2013), by Improving Children's Creativity through Plasticine Playing in Group A In Paud Plus Al Fattah Kulon Jombang District in 2014, 20 respondents who conducted 3 meetings in a week with duration of 30 minute are quite effective to train the fine motoric development in pre-school age.

Ardyatmika's research (2016) showed that the average of ability fine motoric development increase significantly from cycle I to cycle II by 25.5% (73 % to 98.5 %) by playdough at group A children in Widhya Kumarasthana kindergarten.
According to researchers, educative game tools such as playdough is very useful for pre-school children to stimulate the smooth muscles and movement of the fingers. Yuniarti (2015) argues that playdough has functions to train, stimulate fine motor consisting of squeezing, rolling and scoring activities, stimulating creativity and imagination of children in order to prepare to practice hand skill such as writing, and other needs when entering school age.

2. Bivariate Analysis

Table 4.3 The Influence of Playdough To fine Motoric Development Of Pre School Age In Nurul Iman Cimahi Kindergarten

<table>
<thead>
<tr>
<th>Influence based on aged</th>
<th>N</th>
<th>Mean Rank Pre Test Dan Post Test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6 years old</td>
<td>29</td>
<td>0,00 – 12,50</td>
<td>0,001</td>
</tr>
</tbody>
</table>

Based on Table 3 The statistical test results obtained p value 0.001 (α <0.05), meaning there is influence playdough for fine motoric development in pre-school age children (4-6 years) in kindergarten Nurul Iman Cimahi.

Based on statistical test results obtained Ho rejected means there is influence playdough for fine motor development in pre-school age children (4-6 years) in kindergarten Nurul Iman Cimahi. The result of this study is similar with the theory of Yuniarti (2015), that the playdough that is educative game tools, is a safe game tool for pre-school age and has benefits to stimulate the development of physical, linguistic, cognitive, and social children that lead to optimize the development of children’s activities such as squeezing, rolling, and forming an object.

Moreover, when Playdough implemented, the children looks happy with this type of game for instance playing with their friends dan cooperative attitude at teh time of research. This because of playdough is not included in the curriculum Kindergarten Nurul Iman Cimahi.

The results of data collection showed that the children who has post test the fine motor ability of the child are able to perform the order in accordance with the observation sheet modifications between DDST and KPSP of fine motoric for pre-school age 4-6 years. In contrast, before given playdough interventions, most respondents included into the category of inappropriate fine motoric development. After being given playdough for 30 minutes /1 meeting held for 3 times, the children be able to write, draw (circle, rectangle, body parts), coloring, and draw straight line, can disstinguish short length of a line, and able composed of 8 level blocks. All respondents age 4 to 6 years were able to follow orders and enter into categories of fine motor development with 27 respondents (93.1%) and 2 respondents (6.9%) entered into the category inappropriate development.

This is supported by a study conducted by Difatiguna (2015), there is an influence between playdough activity with fine motor abilities in pre-school age. This is reinforced by Rahmawati (2014), in the learning motor skills, children need basic skills experience (locomotor, non locomotor and manipulative). Limitations experienced by children tunagrahita are among them is fine motor. Fine motor skills for the child’s tunagrahita is an important thing that must be had. The distribution of fine motor abilities
of children with tunagrahita after post intervention of playdough increase from 56.94% to 88.9%. As the result, it can be concluded that playdough can give effect in improving the fine motor ability in child tunagrahita.

Sari (2015) found there is influence playdough against aspects of fine motor development before and after the stimulation of pre-school age in kindergarten Al-Azhar 1 Bandar Lampung in academic year 2014/2015. The results of observations made before using playdough (plastisin) have a percentage of 30.21%, while the observations made after being intervention with playdough (plastisin) has increased to 71.88%. It can be concluded that there is influence playdough against aspects of fine motor development in kindergarten Azhar 1 in Bandar Lampung.

Playing activities are very effective for improving the fine motor skills associated with physical skills involving small muscles, eye and hand coordination (Yuniarti, 2015). Fine motor development is emphasized on the coordination of hand movements and fingers for example putting or holding an object. Children's activities are very effective for monitoring children's developmental level, sensory and motor activity that is the largest component for the development of muscle functions (Soetjiningingsih, 2012).

According to the analysis of researchers with stimulation that is directed through playdough the small muscles of the child, is more stimulated including squeezing, rolling, and creating a form in accordance with the imagination and creativity. As consequence, this can have an impact on children muscle strength at the time of writing and the ability to follow orders in the observation sheet.

Researchers can see that the ability of pre-school age children (4-6 years) that in pre test, most children are not able to draw 3 to 6 body parts, to arrange 8 beams on it, to draw rectangles. Whereas, at post test, most children are able to do well when making a circle, showing longer lines, making rectangles, drawing people at least 3 to 6 parts of the body and arranging 8 blocks above.

This is in accordance with the theory of Sukarmin (2009), that educational game tools can optimize development of children by age and developmental level that is useful for the development of physical, language, cognitive, and social aspects. The playdough is one of the educational games suitable for optimizing fine motor development in pre school children for writing, drawing, and other needs at a later age.

Conclusion
1. Fine motor development in children aged 4-6 years before the intervention found 24 respondents (82.8%) of 29 respondents with categorical not appropriate.
2. The development of fine motor in children aged 4-6 years after intervention obtained 27 respondents (93.1%) of 29 respondents with categorical appropriate.
3. The result of statistical test is obtained p value 0.001 (α <0.05) meaning that there is influence playdough to fine motor development in pre school age (4-6 years old) at Nurul Iman Cimahi Kindergarten (Ha accepted and Ho rejected).

References


Wong. et.al. (2009). *Buku Ajar Keperawatan Pedia trik*. Jakarta : EGC
Description of Patient’s Pain Level Post Catheter Installation at Local General Hospital

Mochamad Budi Santoso*, Evangeline Hutabarat
Nursing Department Stikes Jenderal Achmad Yani Cimahi
*Email: rj_mbs@yahoo.co.id

Abstract
A common intervention to address urinary system problem is the installation of a urinary catheter. One of the complications that arise in this procedure is pain (Kozier, et al. 2010). This pain is the result of trauma occurring in the urethral mucous membrane than can occur due to friction of the catheter and urethral wall. Pain that occurs due to catheter installation procedure is potentially disturb patient comfort. The purpose of this study was to know the description of pain level in post catheter installation by using jelly that was applied in local General Hospital. The Research method used is descriptive method with the number of samples of 38 respondent, using an observation sheet of pain numeric rating scale. The data used are primary data collected on 19 May 2017 until 7 June 2017.

The result showed that the patient’s pain level was in the range of 4-8. Mean of the patient pain level is 5.07 which in moderate pain category. Moderate and severe pain cause discomfort of the patient. The pain that arises due to lubrication of the urethra is not maximal. many jelly are left outside the urethra so that the mucosal layer of the urethra is not fully coated jelly. This condition also increases the risk of urinary tract infection. Prevention and intervention of pain due to catheter installation need to be done well. An alternative method should be used to maximize lubrication during catheter installation.

Key Words: Catheter, Jelly, Pain
Music interventions in Patients during Coronary Angiographic Procedures at Harapan Kita Hospital Jakarta

Susilawati
Nursing Profession Study Program, School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia
Susilawati.hartanto@yahoo.com

Abstract
According to AHA (2013) stated that more than 2,150 dies every day caused by CAD where every 30 seconds there is 1 death caused by it. CAD can be diagnosed by invasive procedure which is cardiac catheterization. This procedure used to coronary anatomical evaluation. Patients who are undergoing cardiac catheterization complained about anxiety prior and during the procedure. The anxiety experienced prior to cardiac catheterization procedures would negatively impact heart function. Increased anxiety affects the sympathetic nervous system, which can lead to increased blood pressure, heart rate, cardiac contraction, and arrhythmias. Music intervention one of the systematically application to gave relaxation, reducing psychophysiologic stress (Chlan, 1998 dalam Taylor-Piliae & Chair, 2002).

Quasi experimental research method with pretest-posttest with control group design. Sampling using purposive sampling technique with the number of samples of 12 respondents. Data were obtained directly using the STAI questionnaire. And then the data were analyzed univariate and bivariate using independent t test and independent t test.

The result stated that mean anxiety score posttest from control group is 47.55 with deviation standard 9.87 meanwhile mean anxiety score posttest from intervention group is 59.71 with deviation standard is 7.78. Analytical test showed that $p$ value = 0.044 ($\alpha=0.05$) and the conclusion is there is significant difference anxiety score post test between control and intervention group.

The study concluded that music therapy is an effective nursing intervention in situations of stress to reduce anxiety status, blood pressure, heart rate and breathing.

Key words: anxiety, cardiac catheterization, music intervention
Global Health Issues from Nursing Perspectives

Maria Linda G. Buhat
University of Perpetual Help System DALTA, Philippine
Email: mlgbuhat@gmail.com

Abstract
The current health problems, issues and concerns that transcends national boundaries which may be influenced by circumstances or experiences in other countries, and which are best addressed by cooperative actions and solution defined Global health according to Institute of Medicine 1997. Changes in Global context includes changes in the burden of diseases with more long term conditions and non-communicable diseases. The demand for healthcare from aging populations, migration of people, climate and environmental changes to mention a few, are varied. There are ten (10) factors that affects global health includes ischemic heart disease and stroke which are also considered the top ten (10) causes of mortality. In the Sustainable Development Goals (SDG) major targets, specifically SDG 3, reduced by 1/3 pre-mature mortality from non-communicable diseases through prevention and treatment and promote mental health and well being address the issues on Cardio-vascular diseases. The Philippine initiative’s goals to attain health related SDG targets identified three (3) guarantees: First, protect from triple burden of disease, secondly, access to functional service delivery networks, lastly, attain and sustain Universal Health Insurance. Nurses plays a vital role in combating the increasing burden of Cardio-Vascular diseases (CVD). They have the competencies identified by the World Health Organization (WHO) to address the 21st century healthcare workers. Being a patient-centered focus to the global health team is the unique contribution of nurses. The Philippine Heart Center, being the center for excellence in cardio-vascular care is sincere to its Vision Mission and Goals (VMO). We have also included in the discussion some of the initiatives and best practices to Promote, Prevent, Care and Rehabilitate patients especially CVD.

Key Words: Nursing, CVD, global health issues
Developing an Age-Friendly Community in Japan: A case study of T community, Nagasaki City

Yuko Ohara Hirano
Institute of Biomedical Sciences, Nagasaki University
Email: hirano@nagasaki-u.ac.jp

Abstract
Japan, a super-aged society, requires a paradigm change in terms of caring for elderly people in communities: elderly citizens are now expected not only to be consumers, but also providers of elder care services. In this presentation, first, a theoretical framework for the paradigm change in self-help community activities in Japan will be explained from a sociological perspective. Second, a case study will be introduced to demonstrate the effectiveness of self-help activity through quantitative and qualitative data analysis. The case study draws upon activities of a volunteer group, named “Suketto-tai,” in T community of Nagasaki City, Japan. “Suketto-tai” consists of middle-aged and older residents in T community, who unobtrusively meddle, and provide a bit of support for the elderly in the community who are frail or who suffer from degenerative diseases and, therefore, cannot manage such activities themselves. Quantitative and qualitative data analysis indicated that “Suketto-tai” is used not only by people who have a high level of social capital, but also by people who are anxious about personal relationships in the community. The “Suketto-tai” group is also an important role model for transferring such activities to the next generation, enabling residents to develop an age-friendly community.

Key Words: Elderly, community, T-Community
Population Ageing and The Need of Long Term Care for Older Persons in Indonesia

1Tri Budi W. Rahardjo, 2Dinni Agustin, 3Tri Suratmi, 4Dian Elisabeth Guritno, 5Susiana Nugraha

1,2,3Centre for Ageing Studies Universitas Indonesia, 4Universitas Respati Indonesia, 5Ahmad Yani School of Health Sciences

*Email: Tri Budi W. Rahardjo

Abstract

Indonesia’s older population is growing at an unprecedented rate throughout the period of 1990 - 2020, as well as experiencing an increase in life expectancy from 66.7 years to 70.5 years. Thus, Indonesia will enter the aging population that is marked with the percentage of elderly (age 60 and above) reaching 10 percent in 2020. Globally, Indonesia ranks fourth in terms of population density, while in the case of the older population, it is ranked 10th. The number of older persons in Indonesia is expected to increase to 28.8 million (11% of the total population) in 2020, and in 2050, and amount to 80 million (28.68%). Demographic transition is a process of change in population structure as a result of changes in demographic processes, which are currently being experienced by almost all countries in the world in the form of population aging. The problem of the latter is mainly a result of a decrease in fertility rates and an increase of life expectancy. On the other hand, these conditions will be more severe if the aging of the population is accompanied by a pathological condition. The aging process affects the deterioration due to the risk of various diseases, especially chronic/ degenerative. The longer the life of a person, the more the person is prone to experience physical, mental, spiritual, economic and social problems. Based on RISKESDAS (Basic Health Research 2013), the diseases found amongst the older persons in Indonesia include hypertension, osteoarthritis, dental-oral problems, chronic obstructive pulmonary disease (COPD) and diabetes mellitus (DM) (The Ministry of Health of the Republic of Indonesia, 2014). The emergence of various diseases and disorders can lead to functional disabilities in older persons, with more severe conditions requiring the help of others, hence the need of long-term care (long term care/LTC). Disability as measured by the ability to perform activities of everyday life or Activity of Daily Living (ADL) affects approximately 51%, with further increase in the age prevalence. Older persons with mild disabilities form around 51% at age 55-64 years, to 62% at age 65 and above. While severe disability affects about 7% of those aged 55-64 years, rising to 10% at 65-74 years, and 22% at age 75 years and above. The conditions above require health and social service delivery. Therefore health service delivery for the older persons will be conducted in a comprehensive manner, starting from families and communities (integrated health service delivery post for the elderly and home care), first level health service facility (Pusat Kesehatan Masyarakat/ Puskesmas or Community Health Center) and referral health service facility (Hospital) in collaboration with other related social sectors.

Key words: Population ageing, Long Term Care, Health and Social services
The Optimization of Physical Fitness through Mahatma Breathing and Karate

Yusuf Nursyamsi*, Muchamad Ishak
1Physical Education Lecturer of STKIP Pasundan Cimahi, Indonesia
2STKIP Pasundan Cimahi
*Email: yusuf_abufatih87@yahoo.com

Abstract
In physical education subject, students’ physical fitness is low just like in English Education Study Program of STKIP Pasundan Cimahi. This research was conducted to know the influence of mahatma breathing and karate towards the physical fitness in student from STKIP Pasundan Cimahi. The method used in this research is experimental method. The data were obtained from physical fitness test using Tes Kebugaran Jasmani Indonesia (TKJI). As many as 20 students were chosen as population. By using total sampling technique, the entire population was taken as sample. The sample was divided into two groups. Group A was implemented mahatma breathing and Group B was implemented karate. The result showed that 1) mahatma breathing gives significant influence towards the physical fitness of STKIP Pasundan Cimahi’s students; 2) karate gives significant influence towards the physical fitness of STKIP Pasundan Cimahi’s students; and 3) the implementation of mahatma breathing gives more significant influence than karate in increasing the physical fitness of STKIP Pasundan Cimahi’s students. Overall, mahatma breathing and karate can be implemented to optimize physical fitness.

Keywords: Physical fitness, karate, mahatma breathing

Introduction
Based on Setiawan (2009) education basically plays important role in educating the life of nation which targeting to increase Indonesian quality in social, spiritual and intellectual aspect and also professional ability. The teacher is not only suggested teaching each academic subject but also urged to teach external beneficial subjects for example physical education subject.

Physical education subject is an integral part of education. This subject intends to develop many aspects such as physical fitness, motor, critical thinking, social, intellectual, emotional stability, morality and healthy life pattern through selected physical education activity which is planned systematically to achieve national education purposes.

Besides, the students also have to learn extracurricular that exists in school and college. Extracurricular not only gives physical fitness but also develop students’ skill in certain sport branch.

A certain education institution which develops students’ hobby, interest, talent and potency is able to give chance to them to join in order to develop their hobby, interest, talent and potency. Patimah (2011) defines extracurricular as education activity that is conducted outside course time. The activity is held inside or outside environment in order to extend knowledge, enhance skill and internalize values or norms. The purpose of extracurricular is to form complete human being. In other words, extracurricular is education activity that is held outside course time to help students’ development based on their need, potency, talent and interest through activity that is carried out particularly by capable and competence educator.

Physical fitness is the capability of body to do adjustment towards physically load without causing over exhaustion. Based on Nurhasan (2013) there are many definitions of physical fitness, as follows:

1. Karpovichi defines physical fitness as the ability of someone to do certain tasks which need the effort of muscle.
2. Based on Mathews physical fitness is the ability of someone to execute given tasks.
3. According to the result of national seminar physical fitness is the capability to carry out certain tasks or works efficiently without feeling tired.

In general, students’ physical fitness is low or under average and can come down with illness easily because of their laziness to do activity or sport so it makes their physical fitness is not good.
Since physical fitness is important, the teacher must be able to plan a good exercise and provide an exact exercise program.

There are ten components of physical fitness. Those components are as follows: (1) strength, (2) endurance, (3) muscular power, (4) speed, (5) flexibility, (6) agility, (7) coordination, (8) balance, (9) accuracy, and (10) reaction (Harold W. Kohl et al., 2013).

Sport can exercise organs. If sport is accompanied by breathing, so the respiratory system will work perfectly. It can be caused by the reaction of muscle and nerve all together, so the oxygen goes into whole body cells evenly (Lai et al., 2008). Matsuzaki (2006) mentions the best breathing way is *fuku-siki* breathing (using belly). This breathing is done by moving diaphragm vertically. In fact, breathing correlate with mental function and condition. The setting of breathing means the setting of body and soul balance.

It can be concluded that if someone wants to do sport, it is better to implement the way of breathing management in order to produce healthy body. The respiratory system will be more perfect because the muscle and nerve react all together, so the oxygen goes into whole body cells evenly especially to lungs.

According to Irianto (2004) human body is designed to move and do activity physically, so doing exercise physically is part of our life pattern. Physical, motor, emotion and social grow and develop as the function of organs. Physical is a medium to do activity which having biological and psychological process which produce or cause body movement, emotional thinking, feeling and communicating each other.

Iskandar in Nasrulloh (2012) suggests that physical fitness depends on two basic components. There are:

1) Organic fitness. This component refers to special characteristics which are descended from parents.

2) Dynamic fitness. This component has more variables that are used to lead the readiness and body capacity in order to move and act in certain stage depend on situation and condition.

Overall, organic fitness component is hard to be developed; meanwhile dynamic fitness component is able to be developed by doing physical activity. In achieving physical fitness there are so many ways to do. According to Irianto (2004) to get vitality is determined by the quality of exercise, for example the aim of exercise, the selection of exercise model, the facility and the concept of exercise or FIT (frequency, intensity and time). Based on the concept of exercise the frequency of doing exercise must be three until five times in a week. Then, the intensity of exercise is approximately 75-85% of maximum heart rate (MHR) and the time length to do exercise is 20-60 minutes.

*Mahatma* was established on October 28th, 1995 by Dr. H. Riva‘i, MBA. *Mahatma* has many purposes in health and hospitality in religion, society and big family of *mahatma*. Riva‘i (2008) notes the word *mahatma* is neither from Sanskrit nor India. *Mahatma* is an abbreviation of *maju sehat bersama* (move forward and healthy together). Just like its name, *mahatma* aims to invite the society to enhance their health.

*Mahatma* teaches three strengths that must be mastered by each individual (Santoso, 2006). There are:

1. Steps in martial art strength. Each member must be able to master taught steps in martial art because each movement has benefit for body. There are ten steps in martial art of *mahatma* breathing that useful for activating the antibody.

2. Breathing strength. Each movement has breathing strength since it helps the organ to work. There are two essential types of breathing: deep breathing and costal breathing. Deep breathing constructs the diaphragm and causes the air enters the entire lungs and the belly expands. Meanwhile, costal breathing uses the intercostal muscles to expand the rib cage while inhaling.

3. Spirit strength. Spirit is the basic thing in *mahatma* and one’s life. In order to make the result visible, it is good to have spirit strength.

In *mahatma* breathing, the breathing method used is deep breathing. The outstanding thing in deep breathing is the movement of diaphragm up and down. This aims to expedite the air’s exchange because diaphragm is the main respiratory. The rhythmic movement gives massaging effect to liver, gastric, spleen, intestines, kidney, lungs and heart.

There are ten movements and each movement has its benefits. First movement heals gastritis. Second movement increases immunity and heals exhaustion. Third movement activates the

Sagittarius (2008) states karate is martial art from Japan. Karate was developed in 1922 and brought from Japan through Okinawa. At first, it was called “tote” or Chinese hands. When Karate entered Japan, Japanese nationality was at high level. It made Gichin Funakoshi changed Okinawan kanji (tote = Chinese hands) into Japanese kanji become karate (empty hands). The word karate consists of two kanji, kara which means empty and te which means hands.

In Indonesia karate was brought by Drs. Baud A. D. Adikusumo in 1963. Nowadays karate becomes popular since there are a lot of karate competitions. There are three main techniques in karate. There are Kihon (basic technique), Kata (steps in martial arts) and Kumite (competition). Funakoshi states that karate emphasizes spiritually rather than physically. Actually, karate consists in daily life. Someone exercises his body and soul and develops into complete soul. He has modesty and ready to look after the truth. Karate can be taught to all people, young, old, woman and man. The aim of karate is not to be the strongest and not looking for win, but to complete character (Vertonghen and Theeboom, 2012).

The study of physical fitness’s enhancement was initially conducted by Syarifuddin (2012). In his study, entitled “The Effort to Increase Physical fitness through Skipping Exercise towards the Students of Sempalai 3 Elementary School, there was significant enhancement in experimental group with the value of t as many as 3.271 (n=18; t table = 2.110). In later research using the exercise of walk faster program in SD Negeri 1 Kedaton Bandar Lampung, it was obtained the percentage of enhancement as many as 34.30% (Kurniawan, 2013). Since students’ physical fitness is still in low category, it was suggested to use extracurricular as a means of increasing students’ physical fitness (Prakoso and Hartoto, 2015).

The purpose of this research is to know the influence of mahatma breathing and karate towards the physical fitness of STKIP Pasundan Cimahi’s students. Both activities are believed to increase students’ physical fitness. The previous researches were limited by the difficulty in determining the standardization of evaluation. Therefore, this research provided the measurement using Tes Kesegaran Jasmani Indonesia (TKJI). Thus, in the future this research is expected to obtain the illustration of reference to give recommendation and contribution towards the enhancement of physical fitness especially for students and society. Also, the development and the study result of students must be evaluate to know how far the aim of learning process that has been achieved by the students.

In STKIP Pasundan Cimahi there are of several study programs. There are Physical Education, Civic Education and English Education. The students from Civic Education and English Education also must attend physical education subject as many as two credit hours as MKDU (Mata Kuliah Dasar Umum) or general subject. Based on the comparison of three study programs in mid semester test which was given TKJI (Tes Kebugaran Jasmani Indonesia), it was found that the result of English Education study program was the most wistful than others. 90% of the test results were below the average of TKJI standard. Certainly, it was hard for the lecturer to apply sport to the students of English Education in order to increase their physical fitness. Besides, most of the students didn’t like sport because of their incapacity to do hard movement. In that case, it is a must to apply light sport but gives significant impact to physical fitness. The program plan of exercise must be systematical and measurable in order to enhance students’ physical fitness. The enhancement of physical fitness can be conducted in many ways for example in mahatma breathing and karate.

Method
The method used in this research was experimental method. As many as 20 students of English education study program that joined physical education subject in STKIP Pasundan were chosen as population. By using total sampling technique, the data were collected from the entire 20 students. Data are processed statistically used Control Group pre test post test, T1-X1-T2, T1-X2-T2, T-test. Then, the sample was divided into two groups: group A which was implemented mahatma breathing and group B which was implemented karate. The instrument used was physical fitness test using Tes Kebugaran Jasmani Indonesia (TKJI) such as sprint, sit up, pull up, vertical jump and middle-distance running. Several steps were conducted to obtain the data as follows: calculating the mean score and standard deviation, testing the normality using Liliefors, testing the
homogeneity, testing the significance of enhancement and testing the significance of difference.

**Results**

Table 1 showed mean score and standard deviation from group A and group B. In group A, the mean score of pretest was 15.4 and the mean score of posttest was 20.1. The standard deviation of group A was calculated as many as 2.87 (pretest) and 2.37 (posttest). Meanwhile, in group B, the mean score of pretest was 14.4 and the mean score of posttest was 16.8. The standard deviation of group B was calculated as many as 2.17 (pretest) and 2.69 (posttest).

Table 2 provided the result of the normality test. The result showed that the value of $L ((\alpha) = 0.05; n = 10; L = 0.258)$ is bigger than the entire the value of derived $L (Lo)$. This means that all the data is normal.

Table 3 provided the result of homogeneity test. From the calculation, it could be seen that the value of derived $F$ in group A was 1.46 and group B was 1.54. By comparing with the value of $F$ table 0.05 (9:9) 3.18, both of values are smaller than the value of $F$ table. So, the data is homogeneous.

Table 4 showed the significance of the result’s enhancement from group A and group B. Since the value of $t$ table (2.262) is smaller than the value of derived $t$ from group A (10.68), so there is significant influence in group A which was implemented *mahatma* breathing. Also, there is significant influence in group B which was implemented karate with the value of derived $t$ 6.67 bigger than the value of $t$ table (2.262).

The last, after conducting the test of difference’s significance, it was obtained the value of derived $t$ was 3.84 and the value of $t$ table is 2.101. Therefore, the value of derived $t$ was placed outside the acceptance area of $t$ table so the hypothesis is rejected. Then, it could be concluded that there is significant enhancement’s difference of the result between group which was treated *mahatma* breathing and group which was treated karate towards physical fitness in STKIP Pasundan Cimahi. It means *mahatma* breathing gives more significant influence rather than karate in the effort to increase physical fitness.

### Table 1. Mean Score and Standard Deviation

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score</th>
<th>±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre test</td>
</tr>
<tr>
<td>A (<em>mahatma</em> breathing)</td>
<td>15.4</td>
<td>20.1</td>
</tr>
<tr>
<td>B (karate)</td>
<td>14.4</td>
<td>16.8</td>
</tr>
</tbody>
</table>

SD = Standard Deviation

### Table 2. The Result of Normality Test

<table>
<thead>
<tr>
<th>Group</th>
<th>Test Period</th>
<th>Lo</th>
<th>L table</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (<em>mahatma</em> breathing)</td>
<td>Pretest</td>
<td>0.1844</td>
<td>0.258</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>0.1505</td>
<td>0.258</td>
<td>Normal</td>
</tr>
<tr>
<td>B (karate)</td>
<td>Pretest</td>
<td>0.1643</td>
<td>0.258</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>0.2386</td>
<td>0.258</td>
<td>Normal</td>
</tr>
</tbody>
</table>

### Table 3. The Result of Homogeneity Test

<table>
<thead>
<tr>
<th>Group</th>
<th>Standard Deviation</th>
<th>F</th>
<th>F table</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>1.46</td>
<td>3.18</td>
</tr>
<tr>
<td>A (<em>mahatma</em> breathing)</td>
<td>2.85</td>
<td>2.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B (karate)</td>
<td>2.17</td>
<td>2.69</td>
<td>1.54</td>
<td>3.18</td>
</tr>
</tbody>
</table>
Table 4. The Result of Significance Test of the Enhancement from Group A and Group B

<table>
<thead>
<tr>
<th>Group</th>
<th>t&lt;sub&gt;o&lt;/sub&gt;</th>
<th>t&lt;sub&gt;table&lt;/sub&gt;</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (mahatma breathing)</td>
<td>10.68</td>
<td>2.262</td>
<td>Significance</td>
</tr>
<tr>
<td>B (karate)</td>
<td>6.67</td>
<td>2.262</td>
<td>Significance</td>
</tr>
</tbody>
</table>

Table 5. The Result of Difference Significance from Group A and Group B

<table>
<thead>
<tr>
<th>Group</th>
<th>t&lt;sub&gt;o&lt;/sub&gt;</th>
<th>t&lt;sub&gt;table&lt;/sub&gt;</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (mahatma breathing)</td>
<td>3.84</td>
<td>2.101</td>
<td>Significance</td>
</tr>
<tr>
<td>B (karate)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

In mahatma breathing, one’s emotion can be restrained. For example, ill-tempered and sensitive person can change into patient person. Stress can be eliminated and change into confident feeling. There are some exercises that are correlated with physical fitness. The training consists in warming up, such as run, push up and scout jump. Each movement has the component of physical fitness, namely power. Besides, mahatma breathing teaches the management of breath to expedite the function of organ for example lungs (Grattan, 1994).

There are so many benefits from karate for physical. First, it benefits the coordination of body muscles. This can be trained easily in young age. Second, it is useful for balance. A good body posture is able to decrease the risk of diseases. Besides, karate forms strong mental and excellent confidence. A person who applies karate using bushido can have discipline, confidence, strong and healthy. The components of physical fitness in karate are power, speed and endurance.

In the comparison of mahatma breathing and karate, both of them have significant influence towards students’ physical fitness. The difference is in mahatma breathing, the implementation of breathing management is applied in each movement; meanwhile, in karate the breathing management is only applied in certain movement. It makes mahatma breathing has more significant influence towards students’ physical fitness.

Conclusion

This research proved that low physical fitness can be avoided by implementing some treatments for example mahatma breathing and karate. By applying mahatma breathing, the students are able to control their emotional well. On the other hand, karate creates good coordination of muscles when doing activity. Overall, it is found that mahatma breathing gives more significant influence because in implementing mahatma breathing, the students are asked to apply breathing in every movement. If an athlete applies breathing exercise, he is able to build-up his stamina, physic, tactic and technique. Further research needs to be carried out the other variables besides physical fitness.

Acknowledgment

The researcher gratefully acknowledges the support and generosity of STKIP Pasundan Cimahi, without which the present research could not have been completed especially to Dr. Ahmad Sobarna as the head of Physical Education study program. Also, thanks to Nurjanah and Eli Nugraha for their feedback.

References


Attitude Effect To the Clean and Healthy Behaviour Children in Rawa Buaya 08 Elementary School

Gisely Vionalita¹ and Devi Angeliana Kusumaningtiar²

¹,²Department of Public Health, Faculty of Health Sciences, University of Esa Unggul

*E-mail: gisely@esaunggul.ac.id

Abstract

Clean and healthy behavior (PHBS) is a behavior that is related to the emergence of infectious diseases. School-aged children are prone to health problems, such as worm infections and diarrhea. In 08 Rawa Buaya Elementary School it self has complained about the number of children suffering from diarrheal diseases. In fact almost 80% of children in grade IV and V SD claimed to have experienced the incidence of Diarrhea (Profile of Rawa Buaya Health Center, 2015). The local Puskesmas profile also recorded incidence of worms and leptospirosis is also prone to occur in this area. The objective of this study is to the effect between knowledge and attitude with the clean and healthy behavior in 08 Rawa Buaya Elementary School. The study population included 127 people from fourth and fifth grade in that elementary school assumed as the age when the children can answer the questions regarding clean and healthy behavior. The data was obtained from face to face interview using structured questionnaire. Data that collected was categorized and analyzed using chi square. The result of this study is there are not significant relationship between knowledge with clean and healthy behavior of children (P=0,095) and significant relationship between attitude with the clean & healthy behavior (P=0,003). This study shows that the importance of always teaching daily clean and healthy behavior that will lead to an intensity in the implementation. The role and encouragement of teachers and parents is very important in providing a basic understanding for children in order to form a good attitude.

Keywords: knowledge, attitude, clean and healthy behaviour (PHBS), elementary school

Introduction

Clean and healthy behavior (PHBS) is a manifestation of the reality of human life by applying the principles of the learning process, so that this healthy life behavior will occur because of the learning process that every day they get, both the school environment, family and community. With the process of learning this insight will increase, so that students are expected to be able to review and interpret something that every time there dihadapanya and is expected to mensosialisakan and apply in everyday life. Clean and healthy life behavior is a behavior that is closely related to built infectious diseases.

School-aged children are prone to health problems, such as worm infections and diarrhea. Based on the results of basic health research (Depkes RI, 2008) diarrhea is the leading cause of death in infants (31.4%) and children under five (25.2%). About 162,000 children die from diarrhea every year or about 460 toddlers per day. While the results of household health surveys (SKRT) in Indonesia diarrhea is the second leading cause of death in infants, number three for infants, and number five for all ages. Every child in Indonesia experiences episodes of diarrhea as much as 1.6-2 times per year (Depkes RI, 2011).

School-aged children are a critical time in planting thoughts about clean living behaviors and this will be greatly influenced by the neighborhood. Elementary school is the first stage formal school that will help teach paradigm about clean and healthy life behavior. If not planted early on this will disrupt the performance of learning and quality of children in the future (Wulandari, 2011). Some habits that can affect children’s health behaviors in children, especially in schools that are child’s breakfast patterns, hand washing habits, ear hygiene, skin hygiene, nail hygiene, hair hygiene, bathing and also the habits of children to snack on the spot carelessly with snacks unhealthy to be consumed by children (Saidah & Ismawati, 2014).

SDN 08 morning rawa buaya is a school located in flood prone area which is still the center of attention of all parties. School is located in a crowded place that always facilitates with
free snacks around without going through the school permit. This can lead to a reflection of an unhealthy way of life and has been familiarized and taught to the child. Lifestyle like this will be closely related to infectious diseases. Sd n 08 morning rawa buaya itself has complained about the number of children suffering from diarrheal diseases. In fact almost 80% of children in grade iv and v sd claimed to have experienced the incidence of diarrhea (profile of rawa buaya health center, 2015). Profile of local health center also recorded incidence of worms and leptospirosis also prone to occur in this area.

Method

This type of research is an observational study, with cross sectional study design. In this research data collection technique that writer use is saturated samples (total sampling) where the respondents of this research are all students of class iv and v which amounted to 165 people. The reason for selecting the sample of the group is the students of grade iv and v is able to read their own numbers, write well, able to be cooperated and not disturbed national examination execution. Analysis of this research data using univariate and bivariate analysis using chi-square test and calculated odds ratio (OR)

Result

Characteristics of respondents can be seen by sex, men as many as 64 people (50.4%) and women as many as 63 people (49.6%). The description of facilities and infrastructure that exist in the school environment PHBS therapy based on KEPMENKES No.1429 / MENKES / SK / XII / 2006.

<table>
<thead>
<tr>
<th>NO</th>
<th>THE VARIABLE CHECKED</th>
<th>Facilities washing use for side</th>
<th>Yes</th>
<th>No</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean water</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soap</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tissue/ Wipe hands</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TOILET</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Separate men and women</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available toilet teacher/ children</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean (Odorless)</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean water</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available soap and carbolic</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available scop, kapstop, WC brush, garbage bin</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No mosquito larva</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goose neck</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SPORT PLACE FACILITIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Muddy</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DISPOSABLE FACILITIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waste place is closed every room</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The existence of Temporary Disposal Site (TPS)</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed and separate bi is available in the school environment</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available waste management and processing</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on observations on PHBS facilities and infrastructure in the school environment, it is stated that hand washing facilities such as soap, running water, soap, tissue / washcloth are not available, toilet facilities are available, waste that is still lacking is the availability of closed and separate garbage containers in the school environment and the absence of waste management.
Table 2. Clean and healthy behavior (PHBS)

<table>
<thead>
<tr>
<th>Variable</th>
<th>P-value</th>
<th>Odd Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>0.095</td>
<td>1.977</td>
<td>0.957 – 4.084</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.003*</td>
<td>3.138</td>
<td>1.507 – 6.534</td>
</tr>
</tbody>
</table>

Chi Square test
*significant

Based on the results of statistical tests show that the value of knowledge with p-value 0.095> 0.05 which means that there is no relationship between knowledge with Clean and healthy behavior (PHBS) in children in SDN 8 Morning Rawa Buaya. OR value of 1.977 then a child with low knowledge has a chance to have 1,977 times less healthy lifestyle (PHBS) compared to a child with good knowledge. While attitudes with p-value value 0.003 <0.05 which means that there is a relationship between attitude and Clean and healthy behavior (PHBS) in children in SDN 8 Morning Rawa Buaya. The OR value of 3,138 ate a child who had less than 3,138 times less chance of having a less healthy lifestyle (PHBS) compared to a child with a good attitude.

Discussion

The proportion of knowledge is less than 78 children (61.4%) and the proportion of knowledge is good for 49 children (38.6%). This is in line with Nursalam (2003), that factors that affect knowledge one of them is counseling and mass media. Based on the observation it is found that the school has not got any information about PHBS and there is no pamphlet or poster about phbs. Based on the results of questionnaires respondents answer the most wrong is the question of the benefits of healthy snacks for children of 83.1% this means that most children do not know the benefits of healthy snacks. Healthy snacks can provide benefits will not cause disease. According to Kristianto's research (2009), it is shown that in snack foods for elementary school children sold in the school environment or outside the school environment does not meet the requirements of security requirements due to the use of hazardous substances such as formalin (71.4%), borax (23.5% ), and rhodamine b (18.5%).

The question of the sport's benefit of 78.8% of respondents did not understand it completely. Regular and measurable exercise can maintain physical and mental health in students and can improve students' body fitness so that students do not easily fall ill. Regular and measurable exercise can be done within the school environment conducted jointly by people who are in the school environment such as school employees, committees, cafeteria attendants, and security guards.

The questions about the actions that should be done by the school there is no mosquito nest for 74.9% of respondents do not know. Eradicating mosquito larvae in the school environment proved with no mosquito larva found in water reservoirs, bathtubs, water tents, flower vases, flower pots / flower beds, and used items or places that can accommodate the existing water in the school environment. Mosquito eradication activities (PSN) in the school environment by draining and closing water reservoirs, burying used goods, and avoiding mosquito bites. School environment free from mosquito larvae can prevent the occurrence of the spread of dengue fever, chikunya, filariasis, and malaria.

The most widely understood question of the respondent is about what to do after defecating in the toilets, where to dispose of garbage and diseases that arise if not washing hands. Students and the school community are obliged to dispose of the garbage in the provided garbage. Students are expected to know in choosing types of waste such as organic waste and non-organic waste. This is supported also from the Profile of Rawa Buaya Community health center 2015 states almost 80% of children in grade iv and v sd claimed to have experienced diarrhea.

Based on statistical test, there is no correlation between knowledge and Clean and healthy behavior (PHBS). This is in line with Muliadi (2015) study which states that there is no correlation between knowledge with Clean and healthy behavior (PHBS) and is not in line with the research of Kustantya (2013), states that there is a relationship between knowledge and behavior of clean and healthy life (PHBS). This difference may be due to custesya's research knowledge is not categorized.

Knowledge according to Notoadmodjo (2003) there are 6 levels, namely know, understand, application, analysis, synthesis, and evaluation. The first level of know (know) is
defined as a reminder of a material that has been studied previously. As well as knowledge of phbs, teachers and health cadres in schools are already trying to instill the values of phbs indicators to each student in the school. But if the knowledge is not repeated or recalled then the knowledge will be increasingly eroded or even disappear altogether.

The highest proportion of attitudes was attitudes less than 73 children (57.5%) and a good attitude proportion of 54 children (42.5%). This is not in line with Yuanna (2015) study, stating that the highest proportion of negative attitudes is 37 (61.7%) and the proportion of positive attitudes is 23 (38.3%). The attitude of children less on the indicators of healthy snacks in school is still lacking, many children who do not agree on snacking haphazard health will endanger. This is in accordance with the results of children's knowledge analysis that 83.1% of children do not know the benefits of healthy snacks. The second less attitude is on the indicator to throw the garbage in place. Many children do not agree to throw garbage in a covered bin. Waste that is not managed properly and very well liked animals such as flies, cockroaches, rats that will cause many diseases such as dysentery, typhoid, diarrhea and others (Soemirat, 2015).

The next less attitude to smoking indicators, most children do not agree that health problems / diseases arise when smoking. Cigarette smoke entering the respiratory tract can cause respiratory reflex disturbances, impaired silli (ciliotoxic) function and increase mucus production (Dastyawan, 2000). Cigarette smoke is a free radical that has one or more free electrons. According to Basic Health Research (2007), most smokers start smoking when they are children or adolescents ie at the age of 10-14 years by 13.6% and the number has increased in 2010 by 27.7%. According to research Rahmadi (2013), about 32.3% of students have smoked and generally they have less knowledge about the negative effects of smoking on health. The habit of smoking on the students is influenced by parents, peers, personality, and media information that advertises cigarettes.

A good attitude that many children do is an indicator to eradicate larvae in school, sports school and wash hands with soap before eating. This is in line with a study conducted by Catalina, et.al in 2009. In his study of handwashing behavior in school-aged children in bogota, a third of the samples were always washing hands before eating and after the toilet. Based on observations some children do not have the attitude of washing hands before eating due to lack of facilities from schools such as lack of clean water, the absence of soap and tissues. Besides also some say for forgetting, lazy or no time. On sports indicators based on observation also already have clean sports facilities and not dirty that support for sports activities in school.

Based on statistical analysis show that there is a relationship between attitude and clean and healthy behavior (PHBS). This is in line with koem's research, 2015 states that there is a relationship between attitude with Clean and healthy behavior (PHBS). Negative attitudes are caused by lack of knowledge and absence of awareness from respondents regarding the application of phbs. According to who, attitude describes likes or dislikes someone against the object. Attitudes are often obtained from self-cultivation or from others closest, attitude to make someone approach or move away from an object. A positive attitude toward health values does not always materialize in a real act. Notoatmodjo (2007) puts it, attitude is the response of a closed response from a person to a stimulus or object. The manifestations of that attitude can not be directly seen, but can only be interpreted in advance of closed behavior. Attitude clearly shows the connotation of the suitability of the reaction to a certain stimulus that in everyday life is an emotional reaction to social stimulus.

Conclusion

The result of the research, it can be concluded that there is a relationship between attitude with clean and healthy life behavior (PHBS) and there is no correlation between knowledge with clean and healthy life behavior (PHBS). Child knowledge is lacking on indiscriminate snacking indicators in schools, sporting activities and eradicating larvae. This needs to increase the extension of the children's understanding of PHBS, especially healthy school snacking indicators, exercise and eradicate larvae and add posters or pamphlets that can be read by school children. While the lack of attitude on hand washing using soap, snacks and sports indiscriminate. Schools need to equip facilities or facilities for handwashing such as soap, running water and tissues.

Acknowledgment

Thank you for the graduate lecturers DIKTI
References
Profil Puskesmas rawa Buaya, 2015 Jakarta Barat.
Antifungal Activity of Phyllosphere Actinobacteria against Pyricularia oryzae

Noor Andryan Ilsan
Departement of Medical Laboratory Technology Stikes Mitra Keluarga Bekasi
Email: noorandryanilsan@gmail.com

Abstract
Secondary metabolites produced by microbes provide many pharmaceutical agents such as antibacterial, antifungal, antiviral and immunosuppressant. Antifungal plays important role in inhibit the fungus which detrimental to agriculture and human health. The excess usage of antifungal inducing many fungus species to became resistant so that development of new antifungal is quite important. Actinobacteria are Gram positive bacteria which known to have produced 45% of the total metabolites produced by microbe and 70% of total metabolites produced by bacteria. As many as 33% of the metabolites produced by Streptomyces sp., including metabolites which have antifungal activity. Some phyllosphere actinobacteria are known to have potential antifungal activity. The purposes of this study were to screen rice phyllosphere actinobacteria that has antifungal activity against Pyricularia oryzae (Po) causes rice blast disease and to observe the responses of the hyphae of actinobacteria isolates in vitro. A total of eight isolates had antifungal activity against Po. STG 11 had identified as Streptomyces has the highest inhibitory activity that was 72.5%. The response of Po hyphae towards STG 11 indicate a disruption of growth direction of the hyphae which tend to form a curve. Two isolates had chitinolytic activity and six isolates had no hemolytic activity.

Key words: Actinobacteria, antifungal activity, chitinolytic activity, phyllosphere, Streptomyces

Introduction
Secondary metabolites produced by microbes are the main source of compounds with diverse chemical structures and potentially has a high biological activity (Arasu et al, 2008). Secondary metabolites produced by microbes provide many pharmaceutical agents such asantibacterial, antifungal, antiviral and immunosuppressant. Those low molecular weight compounds are not required for normal growth of microbes although they can be beneficial for its organisms. Bacteria, include a group of actinobacteria, produce some metabolites such as extracellular enzymes and any other various of secondary metabolites (Spadari et al,2013).

Antifungal plays important role in inhibit the fungus which detrimental to agriculture and human health. The escalating use of antifungal agents in long-term treatment strategies has raised the prevalence of fungus strains that are resistant to most commonly prescribed antifungal agents (Selmeczi et al, 2009). Resistant strains find their way to hosts in three colonization and infection scenarios: (i) exposure to an initially susceptible strain that subsequently mutates and becomes resistant; (ii) exposure to a number of strains of which one is resistant and eventually is the only one to thrive, resisting the presence of antifungal drugs in the host organism; and (iii) exposure to an inherently resistant strain (Rex et al, 2008). Growing fungus resistances posses a considerable challenge to the pharmaceutical industry in the search for safe and efficient antifungal drugs (Dhanasekaran et al, 2008). High potency of actinobacteria in producing bioactive compounds make them very useful in order to find new medicines. Thousands of these compounds have been isolated, characterized, and some are used to treat human disease, animal disease, and also solve problems in agriculture (Arasu et al, 2008). It was reported that the number of secondary metabolites produced by microorganisms was about 23000 where 10000 of them produced by actinobacteria. In other words, actinobacteria produced 45% of total metabolites produced by microbes. A total of 7600 of them produced by Streptomyces sp. (Berdi, 2005). Actinobacteria is a group of bacteria that known as a gram positive promising antifungal source, for example, Urauchimycins. Urauchimycins is a class of antimycin which can inhibit electron transport in the respiration chain in mitochondria (Barrow et al, 1993). Antimycins obtained from Streptomyces isolated from integument of Attine ant (genus Acromyrmex) (Seipke et al,
Therefore, research for antifungal produced by actinobacteria from potential and unique source was needed. The previous study reported that cucumber phyllosphere actinobacteria produce antifungal activity. Its culture filtrate may inhibit the germination of pathogenic *Corynespora cassicola* (Wang & Ma, 2011). Research on the activity of secondary metabolites derived from rice phyllosphere actinobacteria has not been done. Ilsan et al (2016) reported that rice phyllosphere actinobacteria have antibacterial activity against Gram-negative bacteria *Xanthomonas oryzae*. *Pyricularia oryzae* (*Po*) is an important pathogenic fungi that causes rice blast disease. In this study, *P. oryzae* used as an initial model in the screening of antifungal produced by rice phyllosphere actinobacteria.

**Method**

**Primary Screening: Inhibition Test of Actinobacteria against Po**

Isolation of rice phyllosphere actinobacteria had done on previous research by Ilsan et al (2016). Inhibition test of actinobacteria against *Po* conducted using dual culture method (El-Tarabilya et al. 2000). *Po* isolates obtained from Department of Plant Protection, Faculty of Agriculture, IPB, courtesy of Dr. Abjad Asih Nawangsih. Actinobacteria streaked on Potato Dextrose Agar (PDA) with a distance of 3 cm from *Po* colony. *Po* colony has taken using sterile pit diameter of 6 mm. The interaction between actinobacteria and *Po* observed after 7 days of incubation at 37°C. Percentage of inhibition calculated using the following formula:

\[
\text{% Inhibition} = \frac{B - A}{B} \times 100\%
\]

A is the length of *Po* hyphae grown with actinobacteria  
B is the length of *Po* as a control

**Secondary Screening: Inhibition Test of Actinobacteria against Po**

Antagonistic activity of the supernatant of actinobacteria against *Po* tested using poisoning food method. Actinobacteria were cultured in 50 ml liquid medium of Yeast Malt (YM) and Modified Nutrient Glucose (MNG), incubated for 7 days on a shaker 150 rpm. The culture was centrifuged at 8880 x g for 20 minutes, the pellets were discarded and the supernatant was collected. Each 5 ml and 10 ml of the supernatant was mixed into 10 ml of sterile PDA that not solidified yet then poured into a petri dish. Furthermore, *Po* colony (diameter 6 cm) was place in the middle of the petri dish contains a mixture of PDA and supernatant. Percentage of growth inhibition of hyphae calculated using the following formula:

\[
\text{% inhibition of growth hyphae} = 100 - \frac{(r^2)}{(R^2)}
\]

R: radius of *Po* colony on PDA without actinobacteria supernatant (control)  
r: radius of *Po* colony on PDA with actinobacteria supernatant

Inhibition activity was observed after 7 days of incubation (Boukaew & Prasertsan 2014). The growth of hyphae was observed using a light microscope at the magnification of 400x.

**Test of Chitinolytic Activity**

Actinobacteria were streaked on solid chitin media (3 g colloidal chitin, 1 g K2HPO4, 0.2 g MgSO4 7H2O, 1 g yeast extract, 20 g agarose and 1 L distilled water). Incubation was performed for 6 days at 37°C. Chitinolytic activity was showed by formation clear zone around *Po* colony that indicating the solubility of chitin by actinobacteria (Tahtamouni et al. 2006).
Test of Hemolytic Activity

Actinobacteria were streaked on blood agar medium (5% of sheep blood and 2.5% NaCl), then incubated for 3 days at 37°C. Hemolytic activity was showed by formation clear zone around actinobacteria colony. This formation of a clear zone indicates hemolytic activity by actinobacteria (Garcia-Bernal et al. 2015).

Results

Characteristics of Actinobacteria Which Have Inhibitory Activity Against Po

Seven actinobacteria isolates have inhibitory activity against Po, those are STG 2, STG 6, STG 8, STG 11, STG 13, STG 14 and STG 17 (Figure 1).

Inhibition Activity of Rice Phyllosphere Actinobacteria Against Po

Seven isolates of actinobacteria could inhibit Po with percent inhibition range 17.5-72.5%. Secondary screening using the supernatant showed that seven isolates could inhibit Po. STG 6 showed the highest inhibition of hyphae that is 42.5% (Fig 2; Table 1). The Po that grown with STG 11 and STG 6 has disorder direction of hyphae which tends to form curve growth hyphae (Fig 3). Based on previous research (Ilsan et al. 2016), STG 11 is Streptomyces luteogriseus with the similarity of 97% that had the highest antifungal activity. While STG 8 is Actinomadura sp. with the similarity of 97%. Identification of isolates was performed using 16S rRNA gene molecular approaches.
Figure 3. Response of growth of *Po* hyphae on antagonistic test towards rice phyllosphere actinobacteria using dual culture, observed under a light microscope at the magnification of 400x. (a) the growth of *Po* without rice phyllosphere actinobacteria; disruption of the direction of growth of the *Po* hyphae caused by the growth of (b) STG 6, and (c) STG 11.

<table>
<thead>
<tr>
<th>Isolate</th>
<th>Inhibition (%)</th>
<th>Dual Mycelium inhibition (%)</th>
<th>Food Poisoning Mycelium inhibition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MNG broth 0.5 mL</td>
<td>MNG broth 1 mL</td>
</tr>
<tr>
<td>STG 2</td>
<td>38.3</td>
<td>7.5</td>
<td>12.5</td>
</tr>
<tr>
<td>STG 6</td>
<td>55.0</td>
<td>0.0</td>
<td>42.5</td>
</tr>
<tr>
<td>STG 8</td>
<td>37.5</td>
<td>0.0</td>
<td>5.0</td>
</tr>
<tr>
<td>STG 11</td>
<td>72.5</td>
<td>5.0</td>
<td>12.05</td>
</tr>
<tr>
<td>STG 13</td>
<td>30.8</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>STG 14</td>
<td>45.0</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>STG 17</td>
<td>50.0</td>
<td>7.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Chitinolytic activity of rice phyllosphere actinobacteria

Two isolates had chitinolytic activity i.e. STG 13 and STG 17 (Figure 4). Chitinolytic activity showed by the formation of a clear zone on the media colloidal chitin.

Fig. 4 Chitinolytic activity of rice phyllosphere actinobacteria (a) STG 13 and (b) STG 17. Hemolytic activity of rice phyllosphere actinobacteria on blood agar media. Negative hemolytic reaction isolate (c) STG 13; (d) positive hemolytic reactions isolate STG 17

Hemolytic activity of phyllosphere actinobacteria

As many as one (STG 17) of seven isolates of phyllosphere actinobacteria had positive hemolytic activity. It can be said that six isolates are not potentially pathogenic actinobacteria in animals and humans. Positive hemolytic showed by the formation of the clear zone on blood agar medium (Figure 4).

Discussion

The development of secondary metabolites produced by microorganisms that have antagonistic activity now become important in order to find pharmaceutical agent and biocontrol of plant pathogens. In this study, STG 11 isolate as *S. luteogriseus* had the highest activity in inhibiting the growth of *P. oryzae* both in vitro and through cell culture supernatants. These results indicate that the isolates produce extracellular antifungal substance. The antifungal mechanism may through antibiosis, reduced nutrients around fungi, and hyperparasitism by releasing the cell wall degrading enzymes (i.e. glucanase and chitinase) (Harman et al, 2004; Bakker et al. 2007). It is known that *Streptomyces* widely used in pharmaceutical, agrochemical, industries, and mainly has great commercial value in the food industry (Burja et al, 2001; Vijayakumar et al. 2012).

Many studies have reported the inhibitory activity of actinobacteria against *P. oryzae* using dual culture method, it has inhibitory activity of 60.5%. This proves that STG 11 was better than NRP1-14 isolated from soil has inhibition on *P. oryzae* using dual culture method, it has inhibitory activity of 60.5%. This proves that STG 11 was better than NRP1-14 at inhibiting *Po* in vitro using the same method with % inhibitory up to 72.5%. However, this inhibition was slightly lower than Ferimzone, a new fungicide with biological properties, inhibited the mycelial growth of *P. oryzae* to 89% at 5-20 µg/ml (Gouramanis 1997). Ferimzone (methylacetophenone 4, 6-dimethyl-2-pyrimidinyl- hydrazone) did not affect the respiratory activity of mycelia of *Po*, it caused the leakage of some electrolytes from mycelia, which decreased the pH of the medium, suggesting that ferimzone disrupted membrane function (Okuno et al 1989). *Bacillus licheniformis* MML2501 has been known able to produce azole which antifungal that already used in worldwide (Maheswari, 2011). Azole is the antifungal that already used for human disease (Price et al, 2015) or plant pathogen (Sheehan et al, 1999).

Antifungal activity produced by actinobacteria can be viewed by observing the response of hyphae while treated by the isolates both in vitro and in vivo. In this study, the existence of STG 11 and STG 8 make *Po* hyphal growth inhibited. It causes the hyphae grow curved away from actinobacteria when compared to the control. This is similar to the effect caused by *Pseudomonas*
chloriraphis against Rosellina necatrix, fungi causing white rot disease on the root of avocado, it produces antifungal metabolites 2-hexyl, 5-propyl resorcinol (HPR) (Calderon et al, 2014). Chitinase is one enzyme that can inhibit the growth of fungi. Chitinase containing glycosyl hydrolases that able to catalyze the degradation of chitin into oligomers (chitooligosaccharides) and monomer (N-acetylglucosamine) (Nopakarn et al, 2002). Chitin is the second most abundant polymer in living organisms that composed of beta 1,4-linked N acetylglucosamine (GlcNAc). Chitin found in many groups of microorganisms such as bacteria and fungi as well as contained in the plant and animals. Some isolates that able to inhibit Po invitro also has chitinolytic activity. The existence of a clear zone on colloidal chitin medium indicates that the isolates have the potential to produce chitinase. Other chitinases were studied to exhibit antifungal activities like inhibition of germ tube elongation, spore germination, hyphal tip and bursting of spore (Lin et al, 2009). An antifungal substance used for human purposes must be safe for humans. The hemolytic test was conducted to ensure isolates did not produce hemolysin which can lyse human red blood cells. Isolates that have hemolysin has potential as human and animal pathogens. The presence of clear zone on blood agar indicates isolates produced hemolysin (Hidayati et al, 2014).

Conclusion

A total of seven isolates of actinobacteria can inhibit Po with the percent inhibition ranged from 17.5-72.5% in the primary screening test. Secondary screening using the supernatant showed seven isolates that could inhibit the growth of Po hyphae. The Po that grown with STG 11 has disorder direction of hyphae which tends to form curve growth hyphae. Two isolates have chitinolytic activity and one of them have hemolytic activity.

Acknowledgment

This research was supported by the research program of the Partnership Cooperation of the National Agricultural Research and Development (KKP3N) of the Agriculture Ministry had given to Prof. Aris Tri Wahyudi. Therefore, we are grateful for the funding and support for this study.

References


Literacy Education on Health in Building Environment Health Behaviour: Qualitative Study on Community of Desa Paku Haji, Kecamatan Ngamprah, Bandung Regency

1Neneng Komariah*, 2SalehaRodiah, 3Agus Rusmana
Study Program of Library Science, Universitas Padjadjaran
*Email: neneng.komariah@unpad.ac.id

Abstract
Environment health as an effort of preventing could be done earlier by family or by community. One of the efforts is literacy education on health. This research is about literacy education on health in building environment health literacy. The aims are to find out forms of education on environment health literacy carried out by health officers or nurses; efforts carried out by PKK (family welfare education program) cadres in creating environment health behavior. It used qualitative method with case study approach. Technique of data collecting are interview and literature study, and use data from 5 informants. The research results indicate the health officers and nurses used education strategy that is changing behavior through health education or promotion, which was started by health information dissemination to village official and the community through socialization and education to local government officers then to the community. In addition, the PKK cadres act as communicators who disseminate information which they got from health officers, health guidebook and research reports. They also provide model for the community in protecting environment, so the community at Pakuhaji village can implement environment health behavior as well.

Key words: health literacy, environment health, education strategy, health promotion.

Introduction
Health is an important aspect of a person’s quality of life. But not everyone can understand and practice the health care efforts, whereas if the public is widely aware of the importance of health care, it will help the disease prevention process, improve the quality of health and play an active role in every effort to conduct health care. Bill Number 36 Year 2009 on Health in Article 1 states that "Health is a healthy condition, physically, mentally, spiritually and socially that enables every person to live productively in socially and economically" (Kementrian Kesehatan 2009). So it is known that the condition of health is not only physical, mental, and social aspects, but also includes aspects of productivity economically and socially productivity.

In addition, in the Bill on Health mentioned in Article 52 also explained that the efforts of health prime services include promotive, preventive, curative, and rehabilitative aspects. But now health care in the eyes of the society is still centered on curative and rehabilitative actions, so it tends to lead to the paradigm of ill rather than a healthy paradigm. Health improvement can be pursued by health promotion activities as revitalization of health education. With the promotion of health, not only the process of community awareness or the provision and improvement of public knowledge about health, but also the effort for behavioral change.

Therefore, the effort to become a member of the society who are health information literate becomes the right of every citizen, as stated in the Law of the Republic of Indonesia no. 36 of 2009 on Health in Article 7 that states: Everyone is righted to receive information and education about a balanced and responsible health.

Guidelines for the Implementation of Local Health Promotion as stipulated in the Decree of the Minister of Health Number 1114 / Menkes / SK / VII / 2005 (Kesehatan 2007) which states that health promotion is an effort to improve the ability of the community through learning from, by, for, and with the community so that they can help themselves, developing community-sourced activities in accordance with local socio-cultural conditions and supported by health concerned public policies.

District of Ngamprah West Bandung regency has two Puskesmas (public health centers), namely Puskesmas Cimareme and Ngamprah. Of the five villages which are in the area of Puskesmas Cimareme, there is a village which categorized as underdeveloped village, that is...
Pakuhaji. This Pakuhaji village was just formed in 2013 as an extension of the village of Tanimulya.

From the results of observations and focus group discussions (FGD) in Pakuhaji District Ngamprah, there is a phenomenon that people who do not have awareness about the importance of keeping a healthy environment. This is reflected in the statement of one of the informants: "When I was sweeping the very dirty road in front of someone's home yard, instead of offering to help, the owner said why don't you sweep the entire house. In addition there are also residents who do not want to clean the ditch in front of his house, so it was clogged and when heavy rains came it was flooding.

The data mentioned above become the baseline to state that in the effort to improve the public health level, the community needs to be awakened of their awareness to behave of maintaining environmental health. In addition, they will understand that environmental health is one of preventive efforts that can be done early, both from the family environment and society at large.

This phenomenon encourages us to study the health literacy conducted in the Village Pakuhaji Ngamprah District West Bandung in building environmental health behavior. The purpose of this research is to find out:

1. Forms of health literacy education conducted by health officers
2. Efforts of PKK cadres of Desa Pakuhaji in building environmental health behavior

Method

The method used in this research is qualitative with case study approach, to reveal and describe in more detail the program of "maintaining atmosphere" as health promotion strategy. The case study approach is a suitable strategy when the subject of a question is concerned with how and why, if the researcher has little chance of controlling the events to be investigated and the focus of his research lies in contemporary phenomena in real life (Yin 2008).

As (Deddy Mulyana 2007) points out, the case study is a comprehensive description and explanation of various aspects of an individual, a group, an organization (community), a program, or a social situation. Then get the description of health literacy education with the building of environmental health behavior from phase "know" to phase "want to" conducted by Puskesmas Cimareme and Kader PKK Paku Haji Village. The data collection techniques used in this study are observation, interviews with informants and documentation studies. In this research, the data collection is conducted purposively, that is with certain consideration. For example, the selected person is considered to know most about the strategy of health promotion program, especially related to the development of the maintaining atmosphere. Informants consist of: 1) Ibu Sri Sariningsih, health promoter of PKK Cimareme; 2) Ibu Inang, Pakuhaji Village Midwife; 3) Head of PKK Team of Desa Pakuhaji; 4) Mrs. Lilis and 5) Mrs. Engkar, PKK cadre of Pakuhaji Village.

Result

Pakuhaji Village Ngamprah District West Bandung Regency consists of 4 village areas, 12 RW and 41 RT, with livelihoods generally as farmers and traders. Awareness to maintain environmental health is still relatively low. Therefore, efforts should be made to ensure that the literate community of environmental health is reflected in the appropriate behavior. Handling environmental issues involves and demands the participation of all parties, either directly or indirectly. In this research focuses on the role of health officers and PKK cadres in an effort to improve the health quality of their citizens.

The World Health Organization WHO (Soekijo Notoatmodjo, 2014) classifies several strategies as concrete and positive efforts to achieve appropriate behavioral changes in health norms, namely: 1) Using force (enforcement); 2) using regulatory or regulatory powers, and 3) education. From the results of the observation, we saw that environmental health awareness activities conducted by health workers using education or health promotion, begins with the provision of health information, both in the form of socialization and counseling to village officials and citizens. In addition, village-level working groups and districts are assigned to handle health issues in each village or village, at least in the preventive or preventive phase. This can be done with the socialization of healthy and clean living to every family.

The results from the field is not surprising, because basically health workers are equipped with knowledge related to change community awareness from behavior that does not support
healthy living. One of them by health promotion activities as revitalization of health education. Health promotion activities, not only the process of community awareness or the provision and improvement of public knowledge about health, but also the effort for behavior change. World Health Organization (WHO) in Ottawa Charter 1986 cited by (Soekijo Notoatmodjo 2007) has formulated: "Health promotion is the process of enabling people to increase control over, and improve, their health. To reach a state of complete physical, mental, and social, well-being, an individual or group must be able to identify and realize aspirations, to satisfy needs, and to change or cope with environment."

(Soekijo Notoatmodjo 2007) mentions people who are able or independent in the health sector, have a good knowledge (health literacy), at least as follows:

1. Knowledge of disease, whether contagious or non-contagious. Knowledge of this disease includes: the name or type of disease, signs or symptoms of the disease, the cause of the disease, the mode of disease transmission, the prevention of disease, and the appropriate places of health care to seek healing (treatment)
2. Knowledge of nutrition and food to be consumed in order to stay healthy as a determinant of one's health. Knowledge about the nutrients that must be owned by the community, including nutritional needs for the body. In addition, the types of daily foods that contain the nutrients the body needs, both in quantity and in quality; Consequences or diseases caused by malnutrition and so on
3. Healthy housing and basic sanitation needed to support family or community health. This environmental health knowledge includes, among others: ventilation and house lighting, clean water resources, stool disposal and waste water disposal, garbage disposal and so on
4. Knowledge of the dangers of smoking, and other substances that may cause health problems or addiction i.e. drugs (narcotics and illegal drugs)

Health workers, including health promoters from PKK Cimareme and Pakuhaji Village Midwives in their duty to teach environmental health behavior in accordance with the mission of health promotion, namely: 1) empower individuals, families, and communities to live healthy; 2) foster an atmosphere or environment conducive to the creation of Healthy Clean Lifestyle (PHBS) in the community; 3) advocate for decision makers and policy makers. For the field of advocacy, the materials are usually consulted in advance with UPT Health Promotion in West Bandung District Health Office, because it related to the authority and communication organization.

Health promotion strategies through empowerment will be successful if supported by activities to create an atmosphere or a conducive environment. Establishment of atmosphere is an effort to create an atmosphere or social environment that encourages individuals, families, and communities to prevent illness and improve their health and create a healthy environment and play an active role in every effort to manage health.

In the implementation of health promotion strategies it needs to be strengthened by methods and media and appropriate and the availability of adequate human resources. The referred method here is the method of communication. Basically, empowerment, maintaining atmosphere, and advocacy in principle is the process of communication. It is therefore necessary to determine the appropriate method in the communication process. The choice of method should be done carefully with attention to the information packaging, the state of the receiver of information (sociodemography) and the context of communication.

Media or information facilities also need to be carefully selected according to the established method. It should also pay attention to the target or recipient of the information. If the recipient of the information can not read, for example, then the communication will not be effective if use media full of writing. Or if the recipient of information only has a very short time, it will not be effective if the poster is placed containing the sentence which is too long (Kemenkes, 2007).

In Minister of Health Decree No. 1114 / Menkes / SK / VII / 2005 on Guidelines for Implementation of Health Promotion in the Region(Kesehatan 2012) it is stated that: Health promotion is an effort to improve the ability of the community through learning from, by, for and with communities, so that they can help themselves, and develop community-based activities, in accordance with local socio-cultural conditions and supported by sound public policy. Self-help means people are able to deal with potential (threatening) health problems by preventing them, and addressing the health problems that have occurred by handling them effectively and efficiently. In other words, people are able to behave in a clean and healthy way in order to solve their health
problems, both suffered and potential (threatening) health problems independently (within certain limits).

As we know information and education about health can be obtained from sources of documents, people, institutions, objects or situations. By looking at the situation, such as scattered garbage and clogged sewers, Pakuhaji villagers can tell that a blocked ditch is caused by the amount of garbage collecting in the ditch. More specifically the knowledge of the causes of blocked sewer is referred to as health information literacy. Information literacy is an outcome of health education or health promotion. Definition of health literacy according to WHO which is cited by (Nutbeam 2006) is as follows: Health literacy represents the cognitive and social skills that determine the motivation and ability of people to gain access to, understand and use information in which promote and maintain good health. For that, Nutbeam mentions that health literacy means more than being able to read pamphlets and successfully make appointments. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment. Information literacy of health is important for every citizen, therefore there needs to be a directed community empowerment and sustained government support. This is important in efforts to improve the quality of public health and achieve overall health, namely physical health, mental health, social health and health from the economic aspects.

This can be described in an outcome model for health promotion, as follows:

According (Soekijo Notoatmodjo, 2007) health behavior can be classified into 3 groups, namely:

1) Health maintenance behavior i.e. the behaviors or efforts of a person to maintain or keep health so as not to get sick and efforts to heal if got sick.

2) Searching and use behavior of health service system or facility, or often called health seeking behavior, that is effort or action of someone when suffering from illness and or accident.

3) Environmental health behavior is how a person responds to the environment, both
physical and socio-cultural environment and so on, so that the environment does not affect his health.

In article 6 of Law no. 36 Year 2009 (Kementrian Kesehatan 2009) it is stated that everyone has right to a healthy environment for the achievement of health degree. To be able to achieve good health status, the person must live healthy on a regular basis. To be able to live healthy conditions needed a clean and healthy environment. (Soekijo Notoatmodjo 2007) mentions environmental health practices such as defecating in latrines (toilet), disposing of garbage in trash, using clean water for bathing, washing, cooking and so on.

Behavior is a mutual result between various factors, namely internal factors and external factors that make human behavior become very complex and in a wide range. In the field of public health, especially health education, studying the behavior is important to provide socio psychological conditions in such a way that individuals or communities behave in accordance with the norms of healthy life.

Saparinah Sadli in (Soekijo Notoatmodjo 2007) describes the relationship of individuals with the social environment affect each other as follows:

**Interaction of Health Behavior**

Based on the figure 2 above, environmental health condition in Desa Pakuhaji needs to be identified its relation to behavioral problems affecting health problem, also needs to be identified the physical and social environment matters that influence behavior, health status and quality of life of person or society.

Referring to the function of puskesmas in the Decision Letter Number 128 / Menkes / SK / II / 2004 on Basic Policy of Public Health Center (Kesehatan 2007) it is stated that puskesmas is as a center of community empowerment. Puskesmas strives that individual parties, especially community leaders, families and communities, including the business community to have awareness, willingness, and ability to serve themselves and the community to live healthy, play an
active role in fighting for health interests including financing, and also participate in establishing, organizing and monitoring the implementation of health programs with taking into account the conditions and situations, especially the socio-cultural of the local community. Therefore, the Health Office empowers village cadres or community empowering cadres (KPM), the volunteers who have a concern for improving the quality of the surrounding neighborhood health. Administratively, cadres are chosen by the community themselves, usually due to certain skills. Their skills are, among others, being literate and active in the community. This is a form of community health efforts (UKBM) and its existence in the development of Cimareme Puskesmas.

As the definition of health cadres, according to (Mubarak, W, & Chayatin 2009) are volunteers, elected, trusted, and coming from the local community, have participated in health cadre training as implementers, maintainers and developers of community activities in the effort of health development and community welfare. The cadres are trained by health workers at the Sub-district Level, in order to identify the underlying causes of health problems that may stem from behavioral / knowledge, social environment, physical environment, biological environment or access to health services. Training provided by health workers for cadres based on one of the health promotion missions: Increase community knowledge by doing counseling, education & training and strengthening human resources to raise awareness. The ability and willingness of people to live clean and healthy.

In health literacy education, efforts are made first to increase the knowledge of PKK cadres in access to the acquisition and utilization of information, efforts to disseminate health information and health promotion strategies as a means of education. In the end the line of health literacy education leads to improving the health quality of the residents of Sukahaji Village. The cadres are trying to take advantage of every opportunity in the village to give information about the importance of environmental health. In this case the PKK cadres play a role as facilitators such as through group counseling at posyandu, Dasa Wisma group meetings, social gathering, recitation, village meetings, home visits and others. In addition, PKK cadres gave an example to the community, as one informant explained: "I often make a schedule that says every Sunday morning is time to sweep the road around my house helped by my husband." This effort is an example of how to respond to the environment, especially the physical environment so that Villagers of Desa Pakuhaji can apply environmental health behavior.

Conclusion

The conclusion drew from the research is that health workers conduct educational strategies, namely behavior change through education or health promotion, began with the provision of health information, such as socialization and counseling to village officials and citizens. PKK cadres serve as facilitators who convey information they obtain from health workers, health education guide books, and training outcomes; and provide exemplary behavior to the community related to how to respond to the environment, especially the physical environment so that villagers of Pakuhaji village can apply the environment health behavior.

References


Bacterial Pathogens in Urinary Tract Infection and Antibiotic Susceptibility Pattern at a Private Hospital in Jakarta, Indonesia

Noor Andryan Ilsan*, Maulin Inggriani, Nurhikmah
Dept. of Medical Laboratory Technology Stikes Mitra Keluarga Bekasi
Email: noorandryanilsan@gmail.com

Abstract
Urinary Tract Infection (UTI) is the most widespread infectious disease in the world after respiratory tract infection. The incidence of UTI in Indonesia are around 90-100 cases in every 100,000 population per year. UTI is an infection caused by the growth of microorganisms in human urinary tract involving the kidneys, ureters, bladder, and urethra. UTIs are caused by a variety of bacteria, but the 90% incidence of UTI is caused by E. coli. The pattern of the bacteria causing UTI and its antibiotic susceptibility plays an important role in the treatment of UTI. The aims of this study were to isolate and identify bacterial pathogenic agents that causing UTI at a private hospital in Jakarta and to evaluate their antibiotic susceptibility pattern. A total of 121 (29.2 %) from 293 urine samples collected from patients with UTI symptoms showed a positive bacterial cultures which is the 66.1 % were from females and 33.9 % were from males patients. The UTI- causing bacteria which found were E. coli (65.3 %) and Klebsiella pneumoniae (13.2 %). The highest incidence of UTI occurred in elder patients (38.8 %). Married patients (89.3 %) had a higher incidence of UTI compared with single patients (10.7 %). The antibiotic susceptibility test showed that E.coli isolated from UTI patients was most resistant to amoxicillin and ampicilin (96.05 %) and most susceptible to Piperacilin (98.7 %). KPneumoniae isolated from UTI patients was most resistant to Ampicillin (90.6 %) and most susceptible to Piperacilin (98.83 %)

Key words: Antibiotic susceptibility, bacterial pattern, E.coli, Klebsiella pneumoniae, UTI

Introduction
Urinary Tract Infection (UTI) is the most common infectious disease which come from nosocomial pathogens according to infection site after surgical-site and bloodstream infection (WHO 2002). According to Indonesian Ministry of Health (2005), the incidence of UTI in Indonesia are around 90-100 cases in every 100,000 population per year or approximately 180,000 new cases annually. UTI is an infection caused by the growth of microorganisms in the human urinary tract involving the kidneys (pyelonephritis), ureters, bladder (cystitis), and urethra. UTI is one of the most common infections affecting patients from different age groups (Yusuf et al. 2015). Some studies have shown that UTIs are common in adult females. One in every five adult female experienced UTI in her life and it is extremely common (Hummers-Pradier et al. 2005; Behzadi et al. 2010). More than 95 % of urinary tract infections are caused by single bacterial species. E. coli is the most frequent UTI causing bacteria that lead to an acute infections (Moges & Genetu.2002). E.coli has been known for having virulence factors which help it occupy the urinary tract and induce inflammation. Those factors include the presence of pili or antigen K in bacterial capsule, fimbriae, haemolysin and colicin production also the ability to acquire iron (Rushton 1997). UTIs were also caused by a variety of bacteria including Klebsiella sp., Pseudomonas sp., Acinobacter sp., Staphylococcus sp., Raoutella ornithinolytica, Serratia sp., and Enterobacter sp. The relative frequency of pathogens varied depending on age, sex, chaterization and hospitalization (Selton, 2000). Factors that affect the pathogenesis of UTI i.e. gender, sexual activity, age, obstruction, neurogenic dysfunction of urinary bladder, bacterial virulence factors and genetic factor (Flores-Mireles et al. 2015). Treatment of UTI was often based on information determined from the antimicrobial resistance pattern of bacterial urine pathogens (Wilson & Gaido 2004). The prevalence of antimicrobial resistance among bacterial urine pathogen has been increasing worldwide due to extensive misuse of antibiotics in practice (Bonadio et al, 2001, Grude et al, 2001). The aims of this study were to determine bacterial etiologic agents responsible for urinary tract infection and to evaluate their in vitro susceptibility
pattern of antibiotics. This study is important to facilitate the effective treatment and management of patient with symptoms of urinary tract infection in Jakarta especially at a private hospital in Jakarta, from January to June 2017.

Method

Data Collection

The microbiological and antibiotics susceptibility data of this study were obtained from the laboratory records of private hospital in Jakarta, Indonesia. These data were collected from January to June 2017.

Urine Collection, Isolation and identification of Bacterial Pathogen

The urine samples from patients were collected by clean catch midstream method in sterile containers and were brought to the laboratory as soon as possible. A total of 293 urine samples were collected during this study. Bacterial isolation were carried out in Blood Agar (BA) and Mac Conkey Agar (MCA) medium (Oxoid, UK). Urine samples were homogenized using 10 µl disposable calibrated ose (Citotes) then were streaked onto agar plates medium. The plates were incubated at 37°C for 24 h. Colonies that grew on the medium were counted. Specimens with bacterial colony count less than 10^5 CFU/ml were interpreted as UTI negative and more than 10^5 CFU/ml as UTI positive (Vandepitte et al., 2002). The Gram negative bacteria isolated from urine samples in this study were identified using API 20E (Biomerieux, USA) biochemical test for testing. Meanwhile Mannitol Salt Agar (MSA) medium (Oxoid, UK), oxidase, catalase and coagulase were used for identification of Gram positive bacteria. The bacterial identification and incidence rate were grouped based on age, gender and marital status.

Antibiotic Susceptibility Test

Antibiotic susceptibility test was carried out on Mueller Hinton agar (Oxoid, UK) using disk diffusion (Kirby Bauer’s) method according to the Clinical and Laboratories Standards Institute (CLSI 2014) guidelines using the following 37 antimicrobial agents: Amikacin (30 µg), Amoxicillin (25 µg), Amoxicillin Clavulanic Acid (30 µg), Ampicillin (10 µg), Ampicillin Sulbactam (20 µg), Aztreonam (30 µg), Cefadroxile (30 µg), Cefalotin (30 µg), Cefepime (30 µg), Cefixime (5 µg), Cefoperazone Sulbactam (30 µg), Cefotaxime (30 µg), Cefpirome (30 µg), Cefazidime (30 µg), Ceftriaxone (30 µg), Cefuroxime (30 µg), Cephalexin (30 µg), Chloramphenicol (30 µg), Ciprofloxacin (5µg), Cotrimoxazole (25 µg), Doripenem (10 µg), Doxycycline (30 µg), Fosfomycin (50µg), Gentamicin (10 µg), Imipenem (10 µg), Levofloxacin (5 µg), Meropenem (10 µg), Moxifloxacin (5 µg), Nalidixic Acid (30 µg), Neomycin (30 µg), Netilmicin (30 µg), Nitrofurantion (300 µg), Norfloxacin (10 µg), Ofloxacin (5 µg), Pipemidic Acid (20 µg), Piperacillin (110 µg), and Tigecycline (15 µg).

Results

A total of 293 samples from suspected UTI patients were collected and 121 samples showed positive UTI. Among the patients that showed positive UTI, 80 (66.1 %) samples belonged to female and 41 (33.9 %) samples belonged to male patients (Table 1). According to the Table 2, results of this study also showed that the predominant isolate was E. coli (65.3 %) followed by Klebsiella pneumoniae (13.2 %) which was the second most prevalent bacterial pathogen of UTI. Eleven types of other bacterial species have been found and isolated i.e. Klebsiella oxytoca, Proteus mirabilis, Acinetobacter baumanii, Raoultella ornithinolytica, Serratia marcescens, Serratia odorifera, Pseudomonas fluorescens and Pseudomonas aerogenes (Table 1).
Table 1. Pathogenic bacteria in UTI patients and the incidence percentage based on gender

<table>
<thead>
<tr>
<th>Bacterial pathogen</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Eschericia coli</em></td>
<td>22 (17.6)</td>
<td>57 (47.7)</td>
<td>79 (65.3)</td>
</tr>
<tr>
<td><em>Klebsiella pneumonia</em></td>
<td>6 (5)</td>
<td>10 (8.2)</td>
<td>16 (13.2)</td>
</tr>
<tr>
<td><em>Klebsiella oxytoca</em></td>
<td>6 (5)</td>
<td>1 (0.8)</td>
<td>7 (5.8)</td>
</tr>
<tr>
<td><em>Proteus mirabilis</em></td>
<td>2 (1.65)</td>
<td>2 (1.65)</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td><em>Acinetobacter baumanii</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Rag CLOSED(encoding) rhinoclyta</em></td>
<td>1 (0.8)</td>
<td>3 (2.5)</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td><em>Serratia marcescens</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Serratia odorifera</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Pseudomonas fluorescens</em></td>
<td>1 (0.8)</td>
<td>0</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Pseudomonas aerogenes</em></td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td><em>Enterobacter aerogenes</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Enterobacter cloacae</em></td>
<td>2 (1.7)</td>
<td>0</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><em>Staphylococcus epidermis</em></td>
<td>0</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>41 (33.9)</td>
<td>80 (66.1)</td>
<td>121 (100)</td>
</tr>
</tbody>
</table>

According to Table 2, the highest incidence of UTI occurred in elderly patients (> 66 y.o) i.e. 38.8 %. According to Table 3, married patients (89.3 %) had a higher incidence of UTI compared to single patients (10.7 %).

Table 2. Incidence of UTI based on Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>9 (7.4)</td>
</tr>
<tr>
<td>6-10</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td>11-16</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td>17-25</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>26-35</td>
<td>6 (5)</td>
</tr>
<tr>
<td>36-45</td>
<td>14 (11.6)</td>
</tr>
<tr>
<td>46-55</td>
<td>21 (17.4)</td>
</tr>
<tr>
<td>56-65</td>
<td>19 (15.7)</td>
</tr>
<tr>
<td>&gt;66</td>
<td>47 (38.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>121 (100)</td>
</tr>
</tbody>
</table>
Table 3. Incidence of UTI based on marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married patient</td>
<td>108 (89.3)</td>
</tr>
<tr>
<td>Single patient</td>
<td>13 (10.7)</td>
</tr>
<tr>
<td>Total</td>
<td>121 (100)</td>
</tr>
</tbody>
</table>

The antibiotic susceptibility test result of *E. coli* isolated from UTI patients showed that they were most resistant to amoxicillin and ampicillin (96.05 %) followed by Nalidixic acid (55.26 %) on the other hand *K. pneumoniae* was most resistant to Ampicillin (90.57 %) followed by Ciprofloxacin (90.09 %) and Moxifloxacin (89.67 %). *E. coli* isolated from UTI patients was most susceptible to Piperacillin (98.7 %) followed by Cefoperazone sulbactam, Doripenem and imipenem (98.68 %) meanwhile *K. Pneumoniae* was most susceptible to Piperacillin (98.83 %) followed by Nitrofurantoin (97.44 %) and Cefoperazone sulbactam (95.8 %) (Table 4).

Table 4. Antibiotic susceptibility pattern of *E. coli* and *K. pneumoniae*

<table>
<thead>
<tr>
<th>No</th>
<th>Antibiotic</th>
<th>Concentration</th>
<th>Resistant (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Amikacin</td>
<td>30</td>
<td>3.90</td>
</tr>
<tr>
<td>2</td>
<td>Amoxicillin</td>
<td>25</td>
<td>96.05</td>
</tr>
<tr>
<td>3</td>
<td>Amoxicillin Clavulanic Acid</td>
<td>30</td>
<td>29.33</td>
</tr>
<tr>
<td>4</td>
<td>Ampicillin</td>
<td>10</td>
<td>96.05</td>
</tr>
<tr>
<td>5</td>
<td>Ampicillin Sublactam</td>
<td>20</td>
<td>31.08</td>
</tr>
<tr>
<td>6</td>
<td>Aztreonam</td>
<td>30</td>
<td>5.41</td>
</tr>
<tr>
<td>7</td>
<td>Cefadroxil</td>
<td>30</td>
<td>34.29</td>
</tr>
<tr>
<td>8</td>
<td>Cefalonin</td>
<td>30</td>
<td>52.63</td>
</tr>
<tr>
<td>9</td>
<td>Cefepime</td>
<td>30</td>
<td>3.51</td>
</tr>
<tr>
<td>10</td>
<td>Cefixime</td>
<td>5</td>
<td>28.57</td>
</tr>
<tr>
<td>11</td>
<td>Cefoperazone Sulbactam</td>
<td>30</td>
<td>1.32</td>
</tr>
<tr>
<td>12</td>
<td>Cefotaxime</td>
<td>30</td>
<td>21.05</td>
</tr>
<tr>
<td>13</td>
<td>Cefpirome</td>
<td>30</td>
<td>14.67</td>
</tr>
<tr>
<td>14</td>
<td>Cefpazidine</td>
<td>30</td>
<td>2.63</td>
</tr>
<tr>
<td>15</td>
<td>Ceftriazone</td>
<td>30</td>
<td>16.00</td>
</tr>
<tr>
<td>16</td>
<td>Cefuroxime</td>
<td>30</td>
<td>28.57</td>
</tr>
<tr>
<td>17</td>
<td>Cephalexin</td>
<td>30</td>
<td>37.84</td>
</tr>
</tbody>
</table>
Discussion

This study was conducted to evaluate the distribution of bacterial pathogen species isolated from patients with UTI at a private hospital in Jakarta, Jakarta, Indonesia and their antibiotic susceptibility pattern. Furthermore, it describes the relationship between age, gender, marital status and isolated bacterial pathogens. In this study, 293 samples from clinically suspected UTI patients were collected and 121 samples showed positive UTI. The incidence of UTI were higher and more commonly occurred in female (80 patients/66.1 %) than male (41 patients/33.9 %) patients. The higher frequency in female was due to anatomic and physical factors related to female urinary tract (Al Sweih et al., 2005). Around 25-30% of females between 20-40 years will experience UTI. The incidence of UTI infection in females increases directly with sexual activity and child-bearing (Wilma, 2002). Females are at risk of developing UTI because of their short urethra and certain behavioral factors such as sexual activity and the use of diaphragms and spermicides which promote coliform bacteria colonization in the periurethral area.

The rates of infection are higher in post menopausal females because of bladder or uterine prolapse causing incomplete obstruction of bladder or difficulty in emptying bladder. Females with estrogen deficiency will undergo changes in her vaginal microflora such as Lactobacilli...
which allows an aerobes Gram negative bacteria like *E. coli* to colonize the periurethral (Litza & Brill 2010, Hotchandani & Aggarwal, 2012). The highest incidence of UTI occurred in elderly patients. The frequency of UTI incidence leading to hospitalization also increases with age (Foxman et al, 2001). The elderly men will experience structural and functional abnormalities of the urinary tract. The most common is prostatic hyperplasia, which can cause obstruction and leading to UTI (Naber et al, 2008). Furthermore, the elderly are often have a high risk to diabetes mellitus, that will also increase the susceptibility to UTI (Saint et al. 2006). The incidence of UTI are higher in postmenopausal females as explained earlier. Married patients (89.3 %) had a higher incidence of UTI compared to single patients (10.7 %).

The incidence of infection in females increases directly with sexual activity and child-bearing (Wilm, 2002). Sexual intercourse ≥ 3 times in a week led to higher incidence of UTI. This association had been reported for cystitis (Amiri et al. 2009). The mechanical action of sexual intercourse may facilitate *E. coli* strains to enter the urethra and bladder. Also sexual intercourse can change the normal vaginal flora such as *Lactobacillus* and facilitates *E. coli* colonizing the vagina (Gupta, 1998). Uropathogenic *E. coli* strains have important role for sexual transmission (Brown & Foxman, 2000). Some studies reported that *E. coli* was the most common bacterial pathogen causing UTI (Flores-Mireles et al. 2015) followed by *Klebsiella pneumonieae* (Al-Mijalli, 2017).

In this study, *E. coli* and *K. pneumonieae* were most resistant to ampicillin with 96.05 % and 90.57 % resistant percentage respectively. Other studies also reported that ampicillin did not inhibit the growth of *E. coli* (Cunha et al. 2016, Indonesian Ministry of Health, 2005). Ampicillin and amoxicillin belong to β-lactam antibiotic class which is the oldest and most commonly used class of antibiotic. The extensive misuse and excess usage of antibiotics from β-lactam class induced bacteria to became resistant especially *E. coli* (Hilbert, 2011). Based on a long experienced usage of antibiotics, the therapeutic options for UTI have been developed. The treatment of UTI according to the guidelines of the European Association of Urology (EAU) included fosfomycin and nitrofurantion as first line therapy. As an alternative therapy, Cefpodoxime (Ceftriaxone), Cotrimoxazole and Trimethoprim were possible options which had resistance rate less than 20% (Grabe et al, 2014; Wiedemann et al, 2014 ).

The results of this study showed that *E. coli* was quite sensitive to Fosfomycin (93.51 %), Nitrofurantoin (92.11 %) and Ceftriaxone (84 %) which is less than 20% resistant. Those results were in line with the result of Grabe et al (2014) and Wiedemann et al. (2014) studies. *E. coli* also had a low resistance to Piperacillin (1.3 %) and Imipenem (1.32 %). Those result were in line with previous study which stated that all bacterial UTI had a low or even no resistance to Piperacillin (Sifuentes-Osorno et al, 1996). Meropenem and Imipenem produced satisfactory clinical and bacteriologic response in 90-99 % cases study in vivo with UTI patients (Cox et al, 1995).

**Conclusion**

Females had a higher incidence of Urinary tract infections than males. Elderly had a higher prevalence of UTI than younger people. Married people had a higher incidence of UTI than single people. *E. coli* is the most predominant bacteria causing UTI followed by *Klebsiella pneumonieae*. *E. coli* and *K. pneumonieae* were most resistant to Ampicillin and Amoxicillin. On the other hand, they were most sensitive to Piperaclillin, Doripenem and Imipenem.

**Acknowledgement**

We would like to thank Dr. Lyana Setiawan and Rosdiana for support this study.

**References**


CLSI. 2014. Performance standards for antimicrobial susceptibility testing; twenty-fourth informational supplement. USA: Clinical and Laboratory Standards Institute.


Abstract

ARI (Acute Respiratory Infection) light is a sign of the onset of symptoms of respiratory tract infection. Exposure to dust and long exposure are factors that influence the incidence of light respiratory symptoms. Shipyard industry using media sand as raw materials for cleaning the vessel from rust resulting dust particles. Health problems due to exposure to the dust is important in shipbuilding industry PT. Gamatara Trans Ocean Shipyard. The purpose of this research was to know how strong the relationship long exposure to dust with light respiratory symptoms at the employees of dock master, and was to know total dust levels in the docks area. This research uses descriptive corelative approaching with cross sectional design. The number of samples was 50 persons. The instruments used are questionnaire sheet. Fate dust had been taken using Low Volume Sampler or LVS with gravimetric. Research results showing fate dust in dok 1 is 260 ug/Nm3 and dok 2 is 240 ug/Nm3. There was a long exposure effect with light ISPA symptoms p = 0.003 with PR = 12.75. Based on the results of the study it is recommended that companies need to replace existing masks with special dust specific masks, and companies make rules related to employee overtime.

Key words: Fate dust, Light ARI symptom, Long exsposure

Introduction

Acute Respiratory Infection may occur with a variety of clinical symptoms including cough with fever and shortness of breath. Acute Respiratory Infections (ISPA) is upper or lower respiratory tract disease (WHO, 2008). ARDs affected by pathogenic factors such as occurrence of certain ARDs vary according to several factors: environmental conditions (eg, air pollutants, occupancy density), humidity, cleanliness, season, temperature). WHO 2007 Response Acute Respiratory Infections (ISPA) are upper or lower respiratory tract diseases, usually contagious, which can lead to a wide spectrum of diseases ranging from asymptomatic or mild infections to severe and fatal illness, depending on the pathogen, environmental factors, and host factors.

Symptoms of ARI are characterized by a red and swollen nose mucosal surface which eventually occurs with fever inflammation, swelling of certain tissues to redness. The infection may spread to the lungs, and cause shortness of breath or respiration, the inhaled oxygen is reduced after 3-5 days. Complications that may occur are sinusitis, pharyngitis, middle ear infections, tubal infections eustachii, to bronchitis and pneumonia (Halim, 2012).

The increasingly rapid development of shipbuilding industry to be an indictor of the progress of a nation, increasing welfare, and the availability of employment in this sector is a good example of the increasing shipbuilding industry. The role of shipyards in the context, social, economic, and defense of the country is very important (Abdullah, 2014). The development of shipbuilding industry in addition will produce products that benefit the shipping community will also bring a negative impact on the surrounding environment. One of them is the increase of dust in the air free due to activity of sand balasting. Sand blasting method is to clean the dirt or rust of iron on the ship using sand media (Djatmiko, 2008).

Air pollution is an increase in the concentration of substances in the air that can be caused by human activities. In air pollution is always associated with sources that produce pollution to the air that is moving sources (generally motor vehicles) and immovable sources (generally industrial activity) while the control is always associated with a series of control activities that leads to air quality standards (Government Regulation No.41, 1999). Air is a mixture of gases found in layers that surround the earth. The composition of the gas mixture is
not always constant. The most varied components of concentration are water in the form of H2O vapor and carbon dioxide. The amount of water vapor in the air varies depending on weather and temperature, air can be interpreted as a mixture of some gases that the ratio is not fixed, depending on the conditions of air temperature, air pressure and the surrounding environment.

Major environmental disturbances in ship repair work are air pollution caused by dust from sandblasting activities (Hayes, 2004). Dust sucked by workers can cause lung function disorder which is the main organs of breathing. It is characterized by decreasing lung function which in advanced stage can cause decreasing of lung elasticity. The decrease of lung elasticity can then reduce volume of air volume reservoir (Halim, 2000).

Dust is a pollutant material commonly called pollutants, the dust itself is included into the particle-shaped part of the pollutant. Particles are air pollutants that can be together with other contaminated materials or forms. Dust is usually present in the air in the form of dense granules that are scattered and floated due to wind gusts with the size of 1 micron up to 500 microns (Wardhana, 2004). The technique used in sampling in this research is LVS, this technique can be used to measure indoor and outdoor particulate. The vacuum pump aims to pull the particulate in the air into the tool, then the particulate size is sorted by the separator (impactor) and the dust particles are deposited on the filter. After that will be done gravimetric analysis.

The results of preliminary study conducted by the research on March 15, 2017, through interviews with 10 workers in the general section obtained 4 respondents had experienced mild respiratory symptoms such as coughs, dry throat, accompanied by itching in the nasal passages. Pain data of PT.Gamatara Trans Ocean Shipyard in the last 3 months of last year mention that ISPA disease is one cause of employees absent due to illness with the recorded number is 15 cases (Monthly Report of PT.Gamatara Trans Ocean Shipyard, 2017). The purpose of this study to determine the relationship between the duration of exposure with mild ISPA symptoms in employees exposed to dust levels in Master Doc PT.Gamatara Trans Ocean Shipyard Cirebon Year 2017.

Method
The research method used is cross-sectional study. The population of this research is 50 employees with total sampling technique. The total variable of dust content is done by taking air samples from two monitoring points, namely the dock area and the second docks, including the first step of preparing the low volume sample tool, then LVS is set up using a tripod, after the tool is ready and then turned on and sampling, when sampling weather conditions and wind direction is very supportive so that the samples taken purely air around the monitoring point area, so that air is not affected other activities such as loading and unloading of coal. Data analysis using chi square statistic test at alpha 5%.

Result
1. Levels of dust, duration of exposure, and symptoms of mild ISPA in shipyard workers

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Level of dust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>260</td>
<td>25</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>245</td>
<td>25</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Duration of exposure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 hours of work</td>
<td>16</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>&gt; 8 hours of work</td>
<td>34</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Symptoms of mild ISPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>43</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
2. Correlation duration of exposure with symptoms of mild ISPA

Table 2. Correlation duration of exposure with symptoms of mild ISPA in shipyard workers years 2017

<table>
<thead>
<tr>
<th>No</th>
<th>Duration of exposure</th>
<th>Symptoms of mild ISPA</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>yes</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>8 hours of work</td>
<td>6</td>
<td>37,5</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>&gt; 8 hours of work</td>
<td>1</td>
<td>33</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7</td>
<td>14</td>
<td>43</td>
</tr>
</tbody>
</table>

Discussion

Based on table 1.1, it can be seen that the value of laboratory tests conducted at two points i.e in Doc 1 is 260 ug / Nm3 and in Doc 2 is 245 ug / Nm3 with the number of employees each counted 25 people. The result of these two measurements means that it has exceeded the threshold value (NAB) of 230 ug / Nm3. This research is supported by the result of research conducted by Sandra (2013) at traffic post Polwiltabes Surabaya got that result of measurement of dust 2,9602 ug / Nm3 exceeded threshold. The increase of dust level is caused by the activity of ship cleaning using sand media.

The sand used is sea sand which is sprayed directly kebadan ship which will be done cleaning. Inhaled dust will cause mild ARI symptoms and this is one of the respiratory problems (Chandra, 2005), respiratory distress characterized by mild ARD symptoms, not only caused by dust but external factors that may result in respiratory disturbances, such as weather, wind and humidity. Employee habits factors do not comply with the rules to use dust masks to be one cause of increased symptoms of mild ARI.

The sand used is sea sand which is sprayed directly kebadan ship which will be done cleaning. Inhaled dust will cause mild ARI symptoms and this is one of the respiratory problems (Chandra, 2005), respiratory distress characterized by mild ARD symptoms, not only caused by dust but external factors that may result in respiratory disturbances, such as weather, wind and humidity. Employee habits factors do not comply with the rules to use dust masks to be one cause of increased symptoms of mild ARI.

Total dust levels are particles in air that have a diameter of less than 100 μm (micrometers), between total dust levels, including particles that can be inhaled by the respiratory system. These particles are particles in the atmosphere that have a size equal to or even less than 10 μm (MOH, 2002). Increasing dust levels in gamatara docks are also influenced by the activities of other companies in the port area such as loading and unloading of coal, cringkel, cement and bulk flour. Dust particle mechanisms enter the human body mainly through the respiratory system, therefore the adverse effects mainly occur in the respiratory system. Another factor that is most influential to the respiratory system is mainly the particle size, because the particle size determines how far the penetration of particles into the breathing. Dust is a small solid particle, which is particles of a diameter measuring between 5-10 microns and can be reduced in weight but will persist for some time (Suma "myrrh, 2009)

Increased dust concentration of PT.Gamatara Trans Ocean Shipyard dust is not very significant increase, increasing concentration of dust level is the impact of the number of ship making and repair. Efforts taken as a precautionary measure and control on the shipyard industry is to increase the socialization of the use of special masks at the time of cleaning activities using the sand media.

Judging from the value of the lab test results the concentration of dust has exceeded the quality standard although not very significant, according to the authors to be able to reduce the dust level diarea dock can use water media sprayed into the air so that the dust particles that fly dissolved by water and fall, then on land - vacant land in the dock area can be planted trees titled can be a natural filter. Because the test values are homogeneous then dust levels can not be performed statistical analysis process associated with the relationship of dust levels with mild ARI symptoms. But in total the dust content can be dinterprestasikan in accordance with the value generated from two dust testing points.

The result of data analysis showed that most of respondent with 8 hours exposure time indicated mild ISPA symptoms as much as 10 people (60.2%) and for respondent with duration of exposure> 8 hours indicated mild ARI symptoms of 33 people (97.1%), the time allowed by the individual to be exposed so as not to cause health problems to the individual, so that if the duration of exposure exceeds the specified limits the health status and comfort of the individual may be disrupted (Chandra, 2005). At the time of the study the authors saw that the overtime arrangements were not well scheduled, the overtime arrangements in the masters section were more to the intervention that employees had to be overtime, overtime in this case still comply with the
provisions of law no 13 of 2013 ie 3 hours in a day and 14 hours in one week when there is a delayed job, this causes the employee working hours to exceed normal.

The effect of prolonged exposure is determined from the concentration at exposure and duration of exposure (Handayani, 2003). The longer employees work, the greater the risk of exposure to dust, the effort taken to prevent the increased incidence of mild respiratory symptoms due to the duration of dust exposure is to create a shift schedule appropriate to normal working hours, as well as providing additional nutrition for employees, and maximizing the socialization of special dust masks.

Symptoms of mild respiratory infection are indicative of ARF, ISPA is one type of water bone disease or other airborne disease. When this happens it will cause irritation of the respiratory tract, this irritation will cause more mucus secretion resulting in mild ISPA symptoms (Chandra, 2005). Symptoms of mild ARDs may occur if employees do not comply with the safety aspect, for example, disobedience of employees to use dust masks.

How to prevent the occurrence of mild ARI symptoms by increasing the immune system so as not susceptible to disease, other things that can be done by industry players to improve work nutrition, if the body's immune system increases it will be free from disturbing health. Dust mask suitable for use by the master dock officer is mask type N95 because it can filter dust up to 95% . The physical condition of employees also greatly affect the mild symptoms of mild the more fit the employee then the risk of exposure to symptoms of ISPA will be smaller.

Refer to table 1.2. The result showed that there was correlation between the duration of exposure with mild ISPA symptoms (p value = 0.003), from the result of the field research, it was found that the workers with mild symptom with the duration of 8 hours exposure per day was 62.5%. Researchers get information that when new employees start work, not maximized socialization of SOP and orientation thorough both field orientation and training when apprenticeship on new employees related to prevention of exposure to dust. The results of the study also obtained employees with a long exposure over > 8 hours of 97.%

The duration of exposure indicates a specific time limit allowed by the individual to be exposed so as not to cause health problems to the individual, so that if exposure exceeds the specified limits the health status and comfort of the individual may be impaired (Chandra, 2005). Docking activity using sand media as a tool to clean the ship and work hours exceeds the normal employees due to the target completion of contracts with customers and the activities of neighboring companies around PT, Gamatara which equally produce dust greatly affects the health status of the master doc employee.

Conslusion

The duration of exposure has a significant association causing mild ARF symptoms in shipyard work. The need for overtime adjustment by making overtime schedule if it is in the activity takes additional time to complete this task to prevent the occurrence of Occupational Diseases caused due to the duration exposed to dust exposure in the shipyard location.

References
Halim (2012). Ilmu Penyakit Paru,EGC.Jakarta
Peraturan Pemerintan No 41 tahun 1999 tentang Pencemaran Udara

Larvicidal effect of papaya leaf extracts (Carica papaya L.) toward the larvae of Anopheles aconitus donits mosquitoes as an effort to prevent malaria disease in Rural Areas of Southern Konawe

Nani Yuniar*, Ruslan Majid, La Ode, Muhammad Zety, Enis Wildan
1,2,3,4 Faculty Of Public Health, Halu Oleo Universit, Green Campus, HEA Mokodompit Street, Kendari, Southeast Sulawesi, Indonesia
*E-mail: naniyuniar@yahoo.co.id

Abstract
The Provincial Health Office of Southeast Sulawesi in 2014 in Southeast Sulawesi stated that in South Konawe the case of malaria is still very high with the number of cases as many as 1,339 cases alkaloids, Flavonoids, Saponins, and Tanins contained in leaves C. Papaya can be used as an An larvicidal. Aconitus causes malaria. The purpose of the study was to investigate the effectiveness of papaya leaf extract (C. Papaya) as Larvasida to larvae of mosquito Anopheles aconitus with contact time 12 hours, 24 hours, 36 hours and 48 hours. This type of research is purely experimental with post test design only control group design. The sample is an An mosquito larvae Anopheles aconitus Instar III / IV of 25 in each of 4 treatment units and 1 control with 4 repetitions. The results showed that concentration of 0ppm (control), 125ppm, 250ppm, 500ppm, and 1000ppm, papaya leaf extract (Carica Papaya L) respectively caused larvae deaths of 0%, 8%, 16%, 40%, and 56% for 24 hours treatment, and 0%, 16%, 28%, 68%, and 96%, for 36 hours of treatment. Result of probit test obtained value of LC50 and LC90 at 24 hours equal to 657,278 ppm and 1209,82 ppm. at 36 hours at 424,086 ppm and 837,754 ppm. Kruskall-wallis test results show p <0.05 so that it can be concluded there is a significant difference in the number of dead larvae between groups compared. The conclusion in this research is papaya leaf extract effective as larvasida to larvae of Anopheles aconitus.

Key words: Anopheles aconitus, Leaf extract of C. Papaya, larvacide.

Introduction
Alfias S. et al (2010) states that malaria is a disease caused by a protozoan parasite called plasmodium that can only be seen with a microscope. Malaria is transmitted from people to healthy people by Anopheles mosquitoes. One of the efforts made by the government to suppress the rate of transmission of malaria is by reducing the vector population density (mosquito larvae). One species of mosquito that plays a role in the spread of malaria is Anopheles aconitus mosquito World Health Organization data in 2012 occurred 207 million cases of malaria and 627 thousand deaths. As many as 80% of cases and 90% of deaths occur in Africa and most deaths as many as 77% occur in children under 5 years. Malaria is one of the most serious issues of public health problems in Bangladesh. Aravin et al (2013) conducted a study and stated that malaria endemic areas occur in 13 northern and eastern regions bordering India and Myanmar, 90% of morbidity and mortality rates occur in Rangamati, Bandarban and Khagrachari Regencies. The spread of malaria in Bangladesh is very complex and the most malaria-causing vector in this country is the Anopheles Aconitus Donits mosquito Malaria Occurrence is still common, especially in Thailand. Among the many species of Anopheles, An. minimus and An. aconitus is the primary and secondary vector of malarial disease in Thailand. Aconitus (Celia) is one of the most distributed Anophelines in all of Thailand. According to Junkum Research in Jamil et all (2014), Anopheles aconitus mosquito besides being a malaria vector in Thailand, this mosquito has also become the biggest vector of malaria disease in Indonesia, Bangladesh and Malaysia.

Data of the health department of Republic of Indonesia (2015) mentioned that Malaria disease in Indonesia is still very high. In the book titled "Indonesia Health Profile 2012" published by the Ministry of Health of the Republic of Indonesia recorded the 2011 API is 1.75%, while the year 2012 is 1.69%. This causes malaria to be an important disease to be overcome.

Malaria is still a public health problem in Indonesia, where the development of malaria is monitored through Annual Parasite Incidence (API). The Provincial Health Office of Southeast Sulawesi...
Sulawesi (2014) in Southeast Sulawesi stated that in South Konawe the case of malaria is still very high with the number of cases as many as 1,339 cases. The results of malaria program reports show that the number of clinical cases of malaria in Bima Maroa Public Health Center in 2014 was recorded as 16 people. One of the efforts to eradicate and prevent the transmission of malaria can be done by controlling the vector of the disease. Efforts to control disease vectors can be done biologically in the form of a natural insecticide that is to memafaatkan poisonous plants against insects but has no impact on the environment or environmentally friendly and harmless to humans. Natural insecticides are safe to use because they are easily degraded in nature so they leave no residue in the soil, water, and air. Utomo et al (2010) state that in Indonesia has found 20 species of Anopheles which become malaria vector, one of them is Anopheles aconitus.

According to research conducted by Fathonah on natural insecticides, the use of natural insecticides in Indonesia can be the right choice, because Indonesia has a variety of plants that have the potential as a natural insecticide. One of the herbs that can be used as a natural insecticide is Carica papaya.

In the study of the Power of Killing of Plant Path Powdered Vegetable Seeds made by Utomo (2010), stated that Plants C. Papaya L is a potential plant as a natural insecticide, this is because the content of alkloid, flavonoids and saponins contained therein can be used as a natural insecticide. Papaya leaves contain active ingredients such as papain enzyme, carpain alkaloids, pseudo-carpain, glycosides, carposides, saponins, flavonoids, saccharose, dextrose and levulose. Of these ingredients, which have potential as an insecticide are enzymes papain, saponins, flavonoid alkaloids and carpain. According Kalimuthu (2011), These compounds cause various reactions in the body of the larvae so as to interfere with the growth and development of the larvae Ethanol is a polar compound and can be used to dissolve various organic compounds that are not soluble in water. The use of ethanol solvent will facilitate the separation of the active ingredients contained within the papaya leaf. The research of papaya leaf extract had been done by Ravichandra R, the result of his research proves that papaya leaf extract or Carica Papaya L can kill Culex quinquefasciatus mosquito larvae with highest mortality rate of 61.6% at 500 ppm concentration with 24 hours contact time. 93.3% at a concentration of 300 ppm within 48 hours of contact with the acquisition of LC50 and LC90 values found respectively of 80.56ppm, 380.67ppm, 60.89ppm and 150.75 (Ravichandran, et al 2014).

Research conducted by Wahyuni found that Carica Papaya leaf and seed extract at concentration 30, 60, 90, 120, 150 ppm, with 70% ethanol can kill Aedes aegypti mosquito larvae with 48 hours contact time with result of phytochemical analysis containing secondary compound metabolite like saponins and flavonoids that contain very high levels of toxicity to kill mosquito larvae.

Based on the data and the above researchers interested in conducting research on the Effectiveness of Killer Power Test of Papaya Leaf Extract (Carica Papaya L.) Against Anopheles Aconitus Donits Mosquito larvae as Malaria Prevention in rural areas of South Konawe District.

Method
The type of research used is Experimental research with post test only control group design design. The group was divided into two randomly drawn sections, the experimental group and the control group. Treatment was only in the experimental group. The amount of treatment as much as 5 treatment at concentration 0 ppm (control) 125ppm, 250ppm, 500ppm, and 1000ppm. As for the control group was not given papaya leaf solution (Carica papaya) or concentration of 0 ppm, and only used as a control. After a predetermined time observation the number of larvae of An mosquitoes. Aconitus was killed in the experimental group and the control group. This research was conducted from May to August 2017 by taking 12 hours, 24 hours, 36 hours and 48 hours for observation observation of mosquito larvae mortality. The research was carried out in the Laboratory of Analytical Unit, UPT Integrated Laboratory of Halu Oleo University. The population is the instar larvae III / IV Anopheles aconitus as many as 500 heads are obtained from the rice fields. Selection of sample using Simple Random Sampling method, where sample taken at random.
Old papaya leaves are washed, then dried in a way diangin-aired indoors without exposure to direct sunlight. After drying, then weighed to obtain the final weight of the leaf that is in dry condition. The dried papaya leaves are then mashed with a blender. Papaya leaf powder is then soaked (macerated) into a 2 liter ethanol solvent, then stand for 24 hours with 5 soaks. After 5 days, the blend of papaya leaf and ethanol is filtered to separate the extract solution with the dregs. The filtration results are fed into the evaporator or vacuum rotary evaporator to obtain a concentrated or viscous extract. The viscous extract is then inserted into a sterile bottle and covered with aluminum foil.

Some larvae are taken from container where the catch is taken from the rice field area in the countryside to be observed using a binocular microscope. Initial observations were made by Laboratory of Analytical Unit, UPT Integrated Laboratory to ensure that the larvae were larvae of Anopheles Aconitus Donits instar III / IV mosquito larvae. Based on the observations made and after matching the characteristics of the larvae with the characteristics of Anopheles Aconitus Donits mosquito larvae, it can be concluded that the larvae originating from the rice field in the countryside is the larvae of Anopheles Aconitus Donits mosquitoes.

This research is divided into preliminary and final test. The preliminary test is performed to determine the range of concentration of test material that can kill the larvae which is then used as a benchmark on the final test. the research made 4 concentration range, that is 125ppm, 250ppm, 500ppm, and 1000ppm. Concentrations were selected based on previous studies and Repetition is done 4 times. The results research are processed and presented in the form of tables and graphs. Data analysis to obtain LC50 and LC90 extract of papaya leaf ethanol against Anopheles aconitus larvaeis determined by Probit analysis. Probit analysis is an analysis of the organism's response to various concentrations of certain chemicals to produce a particular response or effect. The data analyzed was the mean percentage of deaths from four repetitions at each concentration.

### Results

**The temperature value of the media at each observation hour**

Temperature measurements are performed at the beginning and end of the treatment. This is done to ensure that the death of the test larvae is not affected and caused by the indoor temperature.

<table>
<thead>
<tr>
<th>Origin of Extract</th>
<th>Concentration</th>
<th>Temperature (°C) At Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Papaya Leaves (C. Papaya)</td>
<td>0ppm (Kontrol)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>125 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>250 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>500 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1000 ppm</td>
<td>25</td>
</tr>
<tr>
<td>Papaya Leaves (C. Papaya)</td>
<td>0ppm (Kontrol)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>125 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>250 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>500 ppm</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1000 ppm</td>
<td>25</td>
</tr>
</tbody>
</table>

The temperature value of the media at each hour of observation can be seen that in Papaya Leaf (C. Papaya) with ethanol solvent in the control group and treatment at 12 o'clock that is 25°C, whereas at 24, 36, and 48 hours in the control and treatment group were the same ie 27°C. For papaya leaf (C. Papaya L) with Aquades solvent in the control group and treatment at 12 o'clock is also the same as the temperature on Papaya Leaves (C. Papaya) with ethanol solvent being 25°C, and at 24, 36, and 48 hours in the control and treatment groups were 27°C, respectively.
Table 2. Observation Treatment Group of Papaya Leaf Extract
Based on 24 Hour Observation Time

<table>
<thead>
<tr>
<th>Deuteronomy</th>
<th>amount (n)</th>
<th>0</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>3</td>
<td>5</td>
<td>10</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>3</td>
<td>5</td>
<td>10</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>amount</td>
<td>100</td>
<td>9</td>
<td>17</td>
<td>40</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

Percentage (%)

Observation Result of Papaya Leaf Extraction Treatment Group Based on Observation Time

It can be seen that in the control group (0 ppm) there was no larval mortality (0%). While in the treatment group at concentration 125 ppm, 250 ppm, 500 ppm, and 1000 ppm the number of dead larvae average successively at 24 hours ie 8%, 16%, 40%, and 56%, and at 36 hours at 16%, 28%, 68%, 96%, of all test larvae after treatment. For more details can be seen in the following graph.

![Graph of Percentage of Deaths of Mosquito larvae An. Aconitus After Treatment with Papaya Leaf Extract (Carica papaya L) Based on Observation Time](image)

Figure 1. Graph of Percentage of Deaths of Mosquito larvae An. Aconitus After Treatment with Papaya Leaf Extract (Carica papaya L) Based on Observation Time
**Probit Analysis**

The results obtained by observation of treatment group of papaya leaf extract based on observation time in the form of cumulative percentage of death of larvae after 12 hours exposure, 24 hours, 36 hours, and 48 hours were analyzed by using probit test to know the value of LC50 and LC90 from papaya leaf extract (C. Papaya) especially on watu 24 hours and 36 hours after treatment. The results of probit test can be seen in the following figure.

![Probability Plot for mortalitas](image)

**Figure 2. The larval mortality of Anopheles Aconitus Donits mosquito larvae within 24 hours**

Based on the picture can be seen that the value of LC50 can be seen from the median value on the curve that is 657.278 ppm. In the picture shows that the greater the concentration of papaya leaf extract, the mortality of Anopheles Aconitus Donits mosquito larvae is also greater. The right curve shows the lower value curve, the middle curve shows the percentile curve and the left shows the upper curve of the data in the appendix. The probable percentage of death of Anopheles Aconitus Donits mosquitoes is in the range of concentration between the lower and upper curves. The increased concentration of papaya leaf extract led to an increased death of Anopheles Aconitus Donits mosquito larvae. This proves the death of Anopheles Aconitus Donits mosquito larvae caused by the toxic nature of papaya leaf extract. However, to find out more about the values of LC50 and LC90 can be seen in Table Values LC50 and LC90 Papaya Leaf Extract.

**Table 4. The Value LC50 and LC90 Papaya Leaf Extract 24 Hours**

<table>
<thead>
<tr>
<th></th>
<th>Leaf Concentration (ppm)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>C50</td>
<td>657.278</td>
<td>594.193</td>
<td>731.338</td>
</tr>
<tr>
<td>C90</td>
<td>1209.82</td>
<td>1085.58</td>
<td>1384.94</td>
</tr>
</tbody>
</table>

The result of probit test on mortality of test larva showed that the value of LC50 and LC90 (95% CI) at doses respectively 657.278 ppm in 300 ml aquades and doses of 1,209.82 ppm in 300 ml of aquadest, meaning that at a dose of 657,278 ppm in 300 ml
aquades papaya leaf extract (C. Papaya L) can kill 50% of Anopheles Aconitus Donits mosquito larvae with lower limit of 594.193ppm and upper limit of 731.338ppm at 95% confidence level. At a dose of 1209.82ppm in 300 ml aquades papaya leaf extract (C. Papaya L) can kill 90% of Anopheles Aconitus Donits mosquito larvae with a lower limit of 1085.58ppm and an upper limit of 1384.94ppm at a 95% confidence level.

Figure 4. The larval mortality of Anopheles Aconitus Donits mosquito larvae at 36 hours

The value of LC50 can be seen from the median value on the curve of 424.086 ppm. In the picture shows that the greater the concentration of papaya leaf extract, the mortality of Anopheles Aconitus Donits mosquito larvae is also greater.

The right curve shows the curve of the lower value, the center curve shows the percentile curve and the left shows the upper curve of the data in the appendix. The probable percentage of death of Anopheles Aconitus Donits mosquitoes is in the range of concentration between the lower and upper curves. Increased concentration of papaya leaf extract led to increased deaths of Anopheles Aconitus Donits mosquito larvae. This proves the death of Anopheles Aconitus Donits mosquito larvae caused by the toxic nature of papaya leaf extract. But to know more about the value of LC50 and LC90 can be seen in the following table.

Table 5. Value of LC50 and LC90 Papaya Leaf Extract

<table>
<thead>
<tr>
<th>Value</th>
<th>Papaya Leaf Extract Concentration (ppm)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>424,086</td>
<td>77,374</td>
<td>473,409</td>
</tr>
<tr>
<td>LC90</td>
<td>837,754</td>
<td>756,479</td>
<td>948,990</td>
</tr>
</tbody>
</table>

Based on probit test to death rate of test larvae, obtained value of LC50 and LC90 (95% CI) respectively at dose 424,086 ppm in 300 ml aquades and dose 837,754 ppm in 300 ml aquades, meaning that at a dose of 424,086 ppm in 300 ml of aquadest extract of papaya leaf (C. Papaya L) can kill 50% of Anopheles Aconitus Donits mosquito larvae with a lower limit of 377.374ppm and an upper limit of 473.409ppm at a 95% confidence level. At a dose of 837,754 ppm in 300 ml aquades papaya leaf extract (C. Papaya L) can kill 90% of Anopheles Aconitus Donits mosquito larvae with a lower limit of 756.479ppm and an upper limit of 948.990ppm at a 95% confidence level.
One Way Anova Test

In addition to using the probit test, the results of this study were also analyzed by one way anova test to determine whether there is an average difference of death of Anopheles Aonitus mosquito larvae in various treatment groups which have normal distribution data requirement and homogeneous data variant. If one way anova test requirements are not met, then the one way anova test will be replaced by crucified-wallis test. Therefore, before conducting further tests on the difference in average death of Anopheles Aonitus Donits mosquito larvae in various treatment groups then first tested the data. One Way Anova test results can be seen in the following table.

Table 6. Normality Test Result of Death of Anopheles Aconitus Mosquito larvae By Kolmogorov-Smirnov

<table>
<thead>
<tr>
<th>N</th>
<th>Kolmogorov-Smirnov Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>.673</td>
<td>.755</td>
</tr>
</tbody>
</table>

Normality test is known from the value of Sig. (P-value) kolmogorov smirnov test. If the value p > 0.05 then it can be concluded normal distributed data. In The Table Normality Test Result of Death of Anopheles Aconitus Mosquito larvae By Kolmogorov-Smirnov, show that p > 0.05 (significant value 0.755 bigger than 0.05), so it can be concluded that the tested data meet the requirement of normality.

Table 7. Homogeneity Test Result of Death Variance of Anopheles Aconitus Donits

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.997</td>
<td>3</td>
<td>8</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Homogeneity test results indicate that the significance value obtained is 0.007 (0.007 less than 0.05) it means that the data obtained have variants that are not the same or not homogeneous. Because the data is not homogeneous (condition of anova not fulfilled) hence this research continued with non parametric statistic method that is with kruskall-wallis test. Kruskall-wallis test results can be seen in the following table.

Table 8. Different Test Results Between Various Treatment Groups Against Anopheles Aconitus Mosquito Death With Kruskall-Wallis

<table>
<thead>
<tr>
<th>Mortalitas</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>20.609</td>
</tr>
<tr>
<td>Df</td>
<td>3</td>
</tr>
<tr>
<td>Asymp. Sig</td>
<td>.002</td>
</tr>
</tbody>
</table>

Differentiation test between groups is known from Sig value. (p-value) test kruskall-wallis. If the value of p <0.05 then it can be concluded there is a significant difference in the number of dead larvae between groups that are compared. The result of kruskall-wallis test shows that p <0.05, so it can be concluded that there is a significant difference in the number of dead larvae between groups compared. That is, there is a significant difference in the number of dead larvae between groups compared.
Discussion

The result data showed that the extract of papaya leaves ethanol (Carica papaya) has larvicidal effect so it can kill the larva of An mosquito. Aconitus. The higher the concentration of papaya leaf ethanol extract the higher the presentation of larval death.

This larvicidal effect is caused by the active compound components contained within the papaya leaf are alkaloids, saponins, flavonoids, and papain enzymes. Efek larvasida ini disebabkan oleh komponen senyawa aktif yang terkandung di dalam daun pepaya yaitu alkoid, saponin, flavonoid, dan enzim papain. The alkaloid compounds found in papaya leaves are karpain alkaloids. Alkaloid compounds work by inhibiting the activity of the enzyme acetylcholinesterase which affects the transmission of nerve impulses, causing the enzyme to undergo phosphorylation and become inactive. This leads to inhibition of the acetylcholine degradation process resulting in the accumulation of acetylcholine in the synaptic cleft. This condition causes a transmission disturbance that can lead to decreased muscle coordination, convulsions, respiratory failure and death (Chidozieh et al, 2014).

Observations have been made on Anopheles Aconitus Donits mosquito larvae in the treatment group, ie at concentrations of 125ppm, 250ppm, 500ppm, and 1000ppm seen begin to curl up and perform telescopic movements, ie upward movement of the water surface quickly. After 48 hours treatment found the dead larva with the body destroyed, floats and does not move when touched with the dropper drops.

The number of dead larvae varies at each treatment concentration. In general it can be concluded that the high concentration of the given concentration will affect the number of dead larvae.

These results indicate that at a concentration of 1000ppm the number of dead larvae average reaches 100%. So the higher the concentration of papaya leaf extract given, the greater the percentage of death of Anophele Aconitus mosquito larvae. This is in accordance with the larvacide effectiveness parameter according to WHO that larvaside concentration is considered effective if it can cause death of test larva between 10-95% which later used to determine the value of Lethal Concentration (LC) and Pesticide Commission that the use of pesticide is effective if it can kill test larvae as much as 90-100%.

According to Junkum, et al (2004), death of larvae during administration of papaya leaf extract occurs because of the substance contained in the papaya leaf. Some of them are enzymes papain, saponin, flavonoid, and tannin. Papain enzyme is a proteolytic enzyme that plays a role in breaking connective tissue, and has a high capacity to hydrolyze the exoskeleton protein by breaking the peptide bond in the protein so that the protein becomes disconnected.

Other compounds in papaya leaves that have a role as insecticide and larvacide are saponins. Saponin is a terpenoid compound that has the activity of binding sterol free in the digestive system, so that the decrease in the amount of free sterols will affect the process of skin turnover in insects (Sukadana et al, 2008). In addition, other contents in papaya leaf that potentially kill the larvae are tannins. The complex compounds resulting from the interaction of tannins with proteins are toxic or toxic which can play a role in inhibiting growth and reducing insect appetite through inhibition of digestive enzyme activity (Chen et al, 2012). Tanin has a sense that is sepat and has the ability to tanning the skin. Tannins are widely present in vascular plants, in angiosperms found especially in wood tissue. Generally tannin-containing plants are avoided by plant-eating animals because of its bitter taste.

Saponins are compounds that are similar to detergents and have the ability to damage cell membranes. These compounds are able to bind to proteins and lipids that make up cell membranes, causing structural changes of proteins and lipids.

According to Octavianus et al, (2014), changes in this structure will result in the reduction of surface tension and the occurrence of osmosis intracellular components so that the cell undergoes lysis.

Flavonoids are powerful inhibitors of the respiratory system. One of the derivatives of flavonoids is rotenon. Rotenone works by inhibiting respiratory enzymes between NAD + (coenzymes involved in oxidation and reduction in metabolic processes) and coenzyme Q (the respiratory coenzyme responsible for carrying electrons in the electron transport chain) resulting in respiratory failure. Papain is a proteolytic enzyme that proceeds deeply solving network bind.

When this papain enzyme into the body of the larvae will affect the body’s metabolism process
where there is a chemical reaction that can cause inhibition of growth hormone so that the larvae can not develop properly and over time can cause death in larvae (Hadi & Soviana, 2012).

In a study of the effectiveness of papaya leaf extract ever conducted by Oladimeji, et al, found that at a concentration of 5% (5000 ppm), the extract killed 40% of Anopheles gambiae larvae within 12 hours, at 24 hours dead larvae of 50%. While at a concentration of 10% (10,000 ppm), the larvae died by 70% within 12 hours, and 80% of larvae died within 24 hours (Komal & Arya, 2013).

Another research using papaya leaf ethanol extract as an insecticide against Anopheles sp mosquito larvae was done by Rahman which was proved by experimental result of research on high concentration of papaya leaf extract that is 4000ppm, Anopheles sp larvae body was destroyed until not remaining. This is due to phenolic compounds that work to damage the cell membrane resulting in lysis in the body of the larvae (Hastuti, 2014). Other studies have also been conducted by Wahyuni, who found that Carica Papaya leaf and seed extract at concentrations of 50, 60, 90, 120, 150 ppm, with 70% ethanol can kill Aedes aegypti mosquito larvae with 48 hours contact time with phytochemical analysis secondary compound metabolites such as saponins and flavonoids that contain very high levels of toxicity to kill mosquito larvae (Wahyuni, 2014).

Another study conducted by Kalu, found that the LC50 value of papaya leaf extract for Anopheles larvae, sp at 38.34 mg / ml (38.340 ppm or 3.834%). Against this research used 70% ethanol solvent, whereas in this study the researchers used 96% ethanol solvent in the papaya leaf extraction process. In this study obtained the value of lethal concentration is smaller than the previous study, where this difference is caused by the use of different solvent concentration, the ethanol solvent properties are 70% more polar compared to 96% ethanol so as to attract secondary metabolite compounds having the same polarity as the solvent used, larva type used in this research is An. aconitus that is captured from natural habitats that live at an average temperature of 28°C, whereas in the Ola study was conducted on Anopheles gambiae larvae where Anopheles species live optimum at 30°C-33°C. Thus, Anopheles gambiae larvae resistance is higher than that of Anopheles endurance tested in this study (Komal & Aria, 2013).

Conclusion
Based on the results of research that has been obtained, it can be concluded that: 1) The concentration of papaya leaf extract (C. Papaya L) is very effective as the cause of death of Anopheles Aconitus Donits mosquito larva especially at concentration 500 ppm and 1000 ppm; 2) The value of LC50 and LC90 papaya leaf extract (C. Papaya) based on probit test at 24 hours was 657,278 ppm and 1209,82 ppm and at 36 hours was 424,086 ppm and 837,754 ppm; 3) The result of Kolmogorov-smirnov analysis shows that p> 0,05. This means that the number of dead larvae between groups satisfies the normality test requirements. The result of kruskall-wallis analysis shows that p <0,05. means that there is a significant difference in the number of dead larvae between groups compared.

Therefore, it is suggested: (1) The results of this study are expected to be an alternative in larval control, especially Anopheles Aconitus Donits mosquito larvae as an eco-friendly vegetable insecticide because the content of pestisidiknya substances more quickly decompose in nature (biodegradable), so it does not cause vector resistance and is relatively safe for humans because the residue is easily lost; (2) a follow-up study to investigate the effectiveness of isolation of secondary metabolite compounds contained in papaya leaf extract as larvicidal to Anopheles Aconitus Donits mosquito larvae and other mosquito larvae, such as Culex, sp; (3) examined the effective duration for papaya leaf extract in killing mosquito larvae, tested the content of secondary metabolite compounds on parts of papaya plants on the same or different varieties of papaya, comparing different extraction methods in making extracts of papaya plants.

Acknowledgment
Thank you researchers to the Ministry of Research Technology and Higher Education (Kemenristekdikti) who has funded this research through Departement for Research and Community Service (LPPM) Halu Oleo University as stipulated in the research contract Number: 616/UN29.20/PPM/2017. Thanks to the UHO Integrated Laboratory for all assistance from start to finish.
References


DOI: 10.1016/j.meegid.2012.08.007


Fathonah, A.K., 2013. Toxicity Test of Leaf and Carica Papaya Seed Extract as Anophes Aconitus Larvasida. Biology Study Program Faculty of Science and Technology Sunan Kalijaga State Islamic University. Yogyakarta. Skripsi


Wahyun D. 2014. New Bioinsecticide Granules Toxin from Extrait of Papaya (Carica papaya) Seed and leaf Modified Against Aedes aegypti larvae . International Conference on
https://doi.org/10.1016/j.proenv.2015.01.047

Factors Related to Microbiology Air Quality in Around The Landfill Piyungan Situmulyo Regency of Bantul DIY Province

1Nayla K Fithri*, 2Susi Iravati

1Department of Public Health, Faculty of Health Sciences, University of Esa Unggul
2Department of Environmental Health, Faculty of Medicine, University of Gadjah Mada

*Email: nayla.kamilia@esaunggul.ac.id

Abstract

Final Waste Disposal has very important functions. It has impacts on environment quality decrease due to midden. It results various pollutant which causes air pollution as well as human health. The midden as vector place, also as place for microorganism, such as fungi and bacteria, they can be easily spread to the air. This research is to find out the factors related to biological quality of the air in the houses around Piyungan. Final Waste Disposal in Situmulyo Subdistrict. This Research uses analytical descriptive survey method with cross-sectional. Based on the results of bivariate analysis, it is shown that there is significant correlation between temperature ($p = 0.061$; coefficient = 0.45), humidity ($p = 0.013$; coefficient = 3.32), physical quality of the houses ($p = 0.002$; coefficient = 3.33), and dwelling density ($p = 0.000$; coefficient = 4.62) and the number of air fungi in the houses. There is no significant correlation between distance ($p = 0.547$; coefficient = 0.67) and the number of air fungi in the houses. There are correlation between air humidity, physical quality, density and the number of air fungi in the houses. It is expected that the society will improve the physical condition of the houses. The government is also expected to improve sufficient waste management system with sanitary landfill method.

Key words: Number of bacteria, number of fungi, physical quality of the house

Introduction

The spread of a disease is the result of an interactive relationship between humans and their environment. Agent disease can enter into the human body through air, water, food either through vector intermediaries or directly between humans. Air as one of the transmission vehicles of disease, was never found free from polluters. Various polluters are released from natural processes and can also come from human activities (Fardiaz, 1992). The results of human activities that become the main source of air pollution is one of them caused by waste. Garbage is a common problem that is complicated and very worrying (Kusnoputri & Susana, 2000).

Based on its kind air pollutants are distinguished into physical, chemical and biological pollutants. The type of biological pollutants that are widely contained in the air is microorganism, groups of microorganisms that are found as living bodies that are not expected by air are bacteria, viruses and fungi. Microorganisms scattered in space are known by the term bioaerosol. Bioaerosol in the room can come from the outside environment and contamination from the room. Bioaerosols from the external environment can be fungi derived from decomposing organisms, dead plants, animal carcasses and piles of waste from organic materials, bacteria and viruses. Contamination coming from inside the room occurs in humidity between 25-75%. In this range the mushroom spores will increase and an increase in the growth of fungi (Fitria et al., 2008).

According to the Environmental Protection Agency (EPA) indoor air pollution ranks 5th in relation to the cause of health problems, as well as according to the European Environmental Agency (EEA) states that air pollution is a major problem that causes health problems in children and issues, a similar issue that will be faced by the whole world in the near future (Zhang & Smith, 2003).

According to a study conducted by Moerdjoko (2004), which compares the number of colonies of microorganisms in different chambers states that the number of microbes (colonies)
in air-conditioned chambers of 3-15 colonies (≤20 colonies) petri dish and in non-AC chambers petri dish 24-43 colonies (> 20 colonies). While other research conducted by Fitria et al. (2008), which aims to determine the air quality in the library room states that in the library found in the pathogen molds of Aspergillus fumigatus, Scopulariopsis candida, and Fusarium verticilloids.

A Final Waste Disposal Site is a shelter for waste production originating from human activities. The existence of TPAS can solve the problem of waste in urban areas. On the other hand, the garbage in the garbage dump is also a source of pollution for the surrounding environment. Open solid waste dumps not only have a direct or perceived impact, for example, the smell can also have a negative effect on air quality in the surrounding area. Places of waste accumulation are good environments for disease-transmitting animals such as flies, mosquitoes, mice, and pathogenic bacteria. The presence of dispersing animals, the disease is easily spread and spread to the surrounding environment. Diseases such as cholera, dysentery, typhoid, diarrhea, and malaria (Royadi, 2006).

TPAS Piyungan was built in 1992 and started operation in 1995 on a land of 13 hectares with a capacity of 2.7 million cubic meters of waste. TPAS Piyungan is close to residential area. The density of housing around the TPAS site is likely to increase, as a result of the better access road to TPAS. The results of the survey conducted in early July 2012, the closest settlement with TPAS is 50m to the north of TPAS and from 100m radius there are 15 houses.

In addition, most of the residents' houses around TPAS Piyungan also become garbage shelters, where the garbage is stacked and scattered around the house, so the residents around TPAS, look less clean. Garbage dump is also very effect on the quality of air around and inside the houses around the TPAS.

In addition to the gases generated by garbage and fumes of motorized rubbish vehicles running around the settlement, garbage piles in TPAS also cause the development of microorganisms called bioaerosols, the bioaerosols consist of bacteria, viruses, molds, spores and fungi in the size of 1 s / d 100 μm so easily carried by the wind to homes around TPAS (Soemirat, 2004).

According to research conducted by Recer et. Al. (2001), it was concluded that the composting site had a very large spread of microorganisms, which spread to the air 500 m. The impact of air pollution in the home on health can occur either directly.

Methods

The research design used was cross sectional, which was aimed to study the relationship between the independent variables (risk factors such as: house distance, house physical quality (ventilation, floor area, floor type, wall type), temperature, humidity and density) tied (the quality of home air biology) In TPAS Piyungan, Bantul District, where the variables are examined at the same time to determine the relationship between these variables. Sampling is done by proportional random sampling where the population is divided into different sub-populations. The number of samples in the study were as many as 39 houses. The sampling technique is scattered in the north, south, west and east of TPAS with the number of samples of 39 houses, based on the sample criteria that is in the direction of dominant wind (North, South, West and East) with relatively similar weather conditions.

The data collection in this research was done by observation about house physical quality, humidity measure, air temperature, house density and house distance from TPAS, fiber to measure the quality of air fungi. Data of observation and interview will be tested statistically by using independent T-test at 95% confidence level so it is known relation between research variables.

Result

The results of research conducted in the homes of residents in the vicinity of Garbage Final Disposal Village Sitimulyo Piyungan Subdistrict Bantul regency can be seen the results of measurement of quality of microbiology of air in the house that can be seen in Table 1.
Table 1. Result Measurement of Quality of Airborne microbiology (Fungi) in House Around Waste Disposal Site of Desa Sitimulyo Subdistrict Piyungan Regency Bantul in 2013.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Object</th>
<th>Result</th>
<th>CFU/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum (CFU/m³)</td>
<td>Maximum (CFU/m³)</td>
</tr>
<tr>
<td>total fungi</td>
<td>39</td>
<td>430</td>
<td>1,200,000</td>
</tr>
</tbody>
</table>

CFU= Coloni Forming Unit

According to Permenkes No. 1077 / Menkes / PER / V / 2011 stating that the standard quality standard for the number of mushrooms is 0 CFU / m³ and from the National Environmental Agency (NEA) which requires the quality standard of mushrooms shall not exceed 500 CFU / m³, measuring results in the amount of airborne fungi all above the predetermined quality standard. So we can see that the air quality at home around TPAS Piyungan Village Sitimulyo Sub Piyungan Bantul District has poor quality of air microbiology.

The relationship between house physical quality, occupancy density, temperature, humidity and distance of house from Final wastedisposal site Piyungan with number of air fungi in house around Final wastedisposal site Piyungan.

The result of bivariate analysis between bebeas variable is temperature, humidity, house physical quality, and occupancy density with dependent variable that is the amount of air fungus briefly presented in table 2.

Tabel 2. Test Result Correlation between the number of Fungi in the scale of logarithm base 10 with variable temperature, humidity, physical quality of the house, and density of dwelling.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Different Mean (Rasio)</th>
<th>P-Value</th>
<th>CI (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not Eligible</td>
<td>0.45</td>
<td>0.061</td>
<td>0.119-1.04</td>
</tr>
<tr>
<td>- Eligible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not Eligible</td>
<td>3.32</td>
<td>0.0013</td>
<td>1.31-8.39</td>
</tr>
<tr>
<td>- Eligible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical quality of the house</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not Eligible</td>
<td>3.33</td>
<td>0.002</td>
<td>1.59-6.95</td>
</tr>
<tr>
<td>- Eligible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwelling Dencity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not Eligible</td>
<td>4.62</td>
<td>0.000</td>
<td>2.45-8.74</td>
</tr>
<tr>
<td>- Eligible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Based on the analysis, from table 2 it was found that humidity variable, physical quality of dwelling, and density have p-value <0.005. So it can be concluded that the humidity (p-value = 0.013) has a significant relationship with the number of fungi in the air. And it can be seen that the value of the ratio of 3.32 which means that unqualified moisture increases the number of fungi by 3.32 times more than the unqualified moisture.

This can be caused by the air humidity in the homes of the people around TPAS Piyungan Desa Sitimulyo is quite high, ranging from 67% - 85%. Based on the American Industrial Hygiene Association, air humidity is one of the main factors in the growth of miikroorganisme, especially fungi. In general, most fungi can grow in humid environment conditions. High humidity of air and unbalanced circulation will stimulate the growth and
development of microorganisms, such as viruses, bacteria, fungi. The growth of microorganisms is also influenced by the availability of adequate nutrients for the proliferation of microorganisms (Widagdo S, 2009). The problem of air pollution in the space is usually due to air humidity and air movement beyond the recommended limits, based on NIOSH's recommendation of criteria for acceptable air humidity is in the range of 35% -65%. Air humidity is a representation of water vapor contained in air. The higher the air humidity, the higher the moisture content in the air. High water vapor plays an important role in the growth of bacteria and fungi in the air, since water vapor is a survival medium for bacteria and air fungi (Jjemba, 2004).

Based on the results of bivariate analysis for physical kulitas variables to the number of fungi obtained p-value = 0.002, so it can be concluded that the quality of physical occupancy has a significant relationship with the number of fungi in the air. And the ratio number is 3.33 which means that the unqualified physical qualities can increase the mushroom number by 3.33 times than the qualified physical quality. As for the temperature variables obtained p-value = 0.061> 0.005 so it can be concluded that the temperature is not related to the number of fungi in the air, with Ratio value of 0.45.

This is possible because the inhabitants around TPAS Piyungan use natural ventilation, so the quality of air in the room is strongly influenced by the quality of air outside the room. Where natural ventilation triggers the difference in air pressure due to wind movement outside the building and the temperature difference in space. This allows the outdoor air to carry dust particles into the room (Pujiastuti L, 1998). Also affected is the position of ventilation at home around TPAS Piyungan where ventilation facing directly with TPA has bigger chance for the entry of mushroom and bacteria into the house, where the bacteria and fungus is brought by wind that blow from TPAS direction to house around TPAS Piyungan.

Based on the results of bivariate analysis for the variable density of occupancy of the number of fungi obtained p-value = 0.000, so it can be concluded that the density of the dwelling has a significant relationship with the number of fungi in the air. And the ratio number is 4.62, which means that the unqualified occupancy density can increase the mushroom number by 3.33-fold compared to the eligible dwelling density.

The dense occupancy rate means a lot of carbon dioxide exhaled as a result of the respiratory process. The carbon dioxide affects indoor air quality because the more people occupy the room, the more fresh air is inhaled and replaced by carbon dioxide, so the amount of indoor carbon dioxide increases. In addition, high levels of density may increase the spread of airborne diseases (Soemirat, 2004).

Conclusions

The conclusion in this research is there is a significant relationship between humidity, density and physical quality of house with the number of mushrooms in the air. It is hoped that people who live around TPAS locations should improve their physical condition, such as adequate ventilation, to keep the air within the house. The environment around the house is planted with trees whose function other than as an air filter can also lower the temperature in the house and made it so that the morning sun can enter into the room one or two hours on a regular basis because the ultra violet light from the sun is known as an antiseptic that can kill microorganisms.

Acknowledgment

We would like to thank Mrs. Susi Iravati for their careful reviews of this manuscript.

References


The Relationship between Body Mass Index (BMI) and Waist Circumference (WC) to fasting blood glucose level based on medical check up result of PT. X Regional Jakarta Employees Year 2016

1Susilowati*, 2Budiman, 3Ari Nurhayati Syabaniarti
1,2,3 Public Health Study Programme,
School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia
* Email: satjadibrata.susi@gmail.com

Abstract
BMI indicate body weight in relation to height and are useful for providing a measure of overweight and obesity in adult populations. Waist circumference used as a surrogate estimate of abdominal fat. The increased prevalence of obesity is associated to the increased incidence of Type 2 Diabetes Mellitus. Indonesia ranks seventh the prevalence of diabetes world with 12,191,564 diabetics in 2013 and predicted to increase up to 21,257,000 in 2030. Jakarta is one of the highest obesity prevalence provinces based on BMI. Cross sectional used as research design to analyze secondary data on medical check up result of PT. X Regional Jakarta employees year 2016. Data were analyzed by univariate, bivariate with Chi Square Test and Spearman Rank Correlation Test. The BMI mean obtained at 26.49 kg/m². There was a relationship between BMI to fasting blood glucose level (r = 0.082, p value = 0.0001) with weak relation and positive pattern. There was also a relationship between Waist Circumference to fasting blood glucose level with p value = 0.01; PR = 1.47 (95%CI: 1.21-1.80). PT. X Regional Jakarta is expected to consider the medical check up results in designing preventive/health promotion programs in workplace.

Keywords: Body Mass Index (BMI), Diabetes, fasting blood glucose level, obesity, Waist Circumference (WC)

Introduction
The prevalence of overweight and obesity continues to increase rapidly. Obesity has become a global pandemic and declared by the World Health Organization (WHO) as the biggest chronic health problem in adults. In 2014, more than 1.9 billion adults aged 18 years and older were overweight. Of these over 600 million adults were obese. Overall, about 13% of the world’s adult population (11% of men and 15% of women) were obese. 39% of adults aged 18 years and over (38% of men and 40% of women) were overweight. The worldwide prevalence of obesity more than doubled between 1980 and 2014.19

The prevalence of obesity based on BMI in Indonesia was 15.4% and the national prevalence of abdominal obesity in population over 15 years was 26.6%. Jakarta Province is one of the highest obesity prevalence provinces based on BMI, for both men and women, above the national prevalence and the highest prevalence of abdominal obesity in Indonesia at 39.7%.2

The increase of overweight and obesity prevalence is associated to a sharp increase in the incidence of Type 2 Diabetes Mellitus. According to the International Diabetes Federation (IDF) survey in 2015, there were 415 million adults suffering from diabetes worldwide, a four-fold increase of 108 million people from the 1980s. By 2040, it is estimated that the number will be up to 642 million. Nearly 80% of people with Diabetes Mellitus live in low and middle income countries. By 2015, the percentage of adults with Diabetes Mellitus was 8.5% (1 in 11 adults suffering from Diabetes Mellitus).10

The development of Diabetes Mellitus in Southeast Asia is seen rapidly compared to other regions. The prevalence of Diabetes Mellitus among adults in the Southeast Asian region increased from 4.1% in the 1980s to 8.6% in 2014 (96 million adults suffering from Diabetes Mellitus), 60% of men and 40% of women with diabetes died before the age of 70 years.

Indonesia is a country in Southeast Asia that has a high prevalence of Diabetes Mellitus and ranked seventh after China, India, United States, Brazil, Russia and Mexico. The number of diabetics in Indonesia in 2013 was 12,191,564 and the number is expected to increase to

306
Diabetes Mellitus is a serious public health problem because the number of sufferers continues
to increase. In 2013, one of the world's largest health burden is Diabetes Mellitus, which is about
612 billion dollars. Direct losses from Diabetes Mellitus include emergency care, hospitalization,
medical services, laboratory tests, medication and temporary care. Indirect losses include
premature mortality, loss of working days affecting lost income, personal losses and
unaccountable things such as pain and sickness. 1.5 million out of 3.7 million deaths worldwide in
2012 is caused by Diabetes Mellitus. Glucose tolerance disorder and Diabetes Mellitus were higher in obese than non-obese people. Obesity causes insulin resistance, ie insulin the body can not work properly causing impaired
glucose tolerance and Type 2 Diabetes Mellitus.

The high prevalence of Diabetes Mellitus and obesity as well as a large cost burden for
Diabetes Mellitus requires prevention efforts through identification of risk factors at an early stage
for the prevention of Diabetes Mellitus. Obesity, particularly abdominal obesity, as an important
risk factor for the onset of Diabetes Mellitus can be identified by Computed Axial Tomography or
Magnetic Resonance Imaging, but the cost is expensive and impractical.

An alternative way of identifying cheaper and more practical abdominal obesity is by using
anthropometric measures that include waist circumference measurements and waist hip ratio
measurements. Both variables have been validated by measurement of abdominal fat by Dual X-
Ray Absorptiometry and Computed Axial tomography as well as showing can predict incidence of
disease and mortality.

The distribution of body fat is more appropriate as a Diabetes Mellitus counterpart compared
to obesity based on BMI. BMI measurements can not show the body fat distribution. Adipose of
the upper body measured through waist hip ratio has a stronger association with Diabetes
Mellitus.

The Indonesians' threshold is said to be obese if BMI value >27.0 kg/m² and is a high risk
group suffer from Type 2 Diabates Mellitus. If BMI is greater than 35 kg/m², the risk of Type 2
Diabetes Mellitus will increase over 10 years by 80-fold compared with BMI less than 22 kg/m².
Recent data from NHANES survey in The United States has shown an increased risk of Type 2
Diabetes Mellitus at all times up to 6-10-fold in 18-year-old individuals with BMI greater than 35
kg/m² compared with individuals with BMI less than 18.5 kg/m² (average difference of 6-7 years
from overall life expectancy).

**Method**

This study aims to know the relationship between Body Mass Index (BMI) and Waist
Circumference (WC) to fasting blood glucose level based medical check up result of PT. X
Regional Jakarta employees year 2016.

Cross-sectional studies were used to determine the association of risk factors and disease
effects by measuring risk factors and effects simultaneously in individuals of a population at one
time. Each respondent was only observed once and the measurement of respondent variable was
done during the examination without follow-up. Risk factors studied were Body Mass Index (BMI)
as an indicator of obesity and Waist Circumference (WC) as an indicator of central obesity. The
effect factor studied was Diabetes Mellitus by looking at the results of fasting blood glucose
examination. BMI, WC and fasting blood glucose levels were measured at one time at the time of
The population in this study were 2,963 (all employees) of PT. X Regional Jakarta who underwent medical check up in 2016. Total sample technique was used to obtain samples from all employees who stated obese based on BMI and abdominal obesity after medical check up. After data processing, there were seven fallen respondents. There was no fasting blood glucose level data of three respondents and no WC measurement data of four respondents. Thus, the total sample included were 2,956 medical check results.

Results
1. **BMI, WC, fasting blood glucose level and age overview based on medical check up result of PT. X Regional Jakarta employees year 2016**

From the results of data processing, there where 1,225 obese respondents based on BMI, and 184 of them were categorized suffering from Diabetes Mellitus. Univariate analysis was done by using statistical test to see the distribution of independent variables BMI and WC.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>2956</td>
<td>15.2</td>
<td>48.7</td>
<td>26.49</td>
<td>26.22</td>
<td>3.86</td>
</tr>
<tr>
<td>WC</td>
<td>2956</td>
<td>54</td>
<td>136</td>
<td>89.00</td>
<td>89.00</td>
<td>9.68</td>
</tr>
<tr>
<td>Fasting glucose level</td>
<td>2956</td>
<td>61</td>
<td>481</td>
<td>108.82</td>
<td>98.00</td>
<td>39.84</td>
</tr>
<tr>
<td>Ages</td>
<td>2956</td>
<td>35</td>
<td>56</td>
<td>48.92</td>
<td>49.00</td>
<td>4.814</td>
</tr>
</tbody>
</table>

2. **Gender overview based on medical check up result of PT. X Regional Jakarta employees year 2016**

Univariate analysis was done by using statistical test to see the distribution of gender as independent variable.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2502</td>
<td>84.6</td>
</tr>
<tr>
<td>Female</td>
<td>454</td>
<td>15.4</td>
</tr>
<tr>
<td>Total</td>
<td>2956</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 2, it was known that most respondents were male (84.6%), while 454 respondents were female (15.4%).

3. **The relationship between BMI and fasting blood glucose level based on medical check up result of PT. X Regional Jakarta employees year 2016**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>Line Equation</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>0.082</td>
<td>0.007</td>
<td>FBG Level = 86.37 + 0.848 BMI</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
From the results of the analysis can be concluded that there was a weak relation with positive pattern between BMI with fasting blood glucose levels. This means that the higher BMI the higher fasting blood glucose levels. Determinant coefficient value 0.007 indicates that BMI affects fasting blood sugar levels of 0.7% and the rest 99.3% fasting blood glucose level are influenced by other variables. Variables of fasting blood glucose level will increase by 0.848 mg/dL for each 1 kg/m² BMI increased.

4. **The relationship between Waist Circumference (WC) and fasting blood glucose level based on medical check up results of PT. X Regional Jakarta employees year 2016**

Based on statistical test result, p value = 0.01. It can be concluded there was a relation between WC and Diabetes Mellitus on respondents. PR = 1.472 (95%CI: 1.21-1.80) showed that abdominal obesity respondents had 1.5 times higher risk of Diabetes Mellitus compared with non abdominal obesity.

**Table 4. The Relation between Waist Circumference (WC) and fasting blood glucose level based on medical check up results of PT. X Regional Jakarta employees year 2016**

<table>
<thead>
<tr>
<th>Waist Circumference (WC)</th>
<th>Diabetes Mellitus</th>
<th>PR (95% CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DM n %</td>
<td>Non DM n %</td>
<td>Total N %</td>
</tr>
<tr>
<td>Abdominal Obesity</td>
<td>234 14.7</td>
<td>1359 85.3</td>
<td>1593 100,0</td>
</tr>
<tr>
<td>Non Abdominal Obesity</td>
<td>136 10,0</td>
<td>1227 90,0</td>
<td>1363 100,0</td>
</tr>
<tr>
<td>Total</td>
<td>370 12,5</td>
<td>2586 87,5</td>
<td>2956 100,0</td>
</tr>
</tbody>
</table>

**Discussion**

1. **The overview of BMI, WC and fasting blood glucose level based on medical check up result of PT. X Regional Jakarta employees in 2016**

This study has shown that there was respondent who has minimum BMI at 15.2 kg/m² that indicates underweight (BMI <17.0 kg m²) and maximum BMI at 48.7 kg/m² that indicates overweight (BMI> 27.0 kg/m²). The respondents in this study has shown BMI mean at 26.49 kg/m² or that the average respondents have mild/fat overweight. Monitoring of nutritional status of adults is very important and needs to be implemented continuously because nutritional problems due to underweight and overweight are very risky to certain diseases and affect work productivity.9

If BMI is greater than 35 kg/m², the risk of Type 2 Diabetes Mellitus will increase over 10 years by 80-fold compared with BMI value less than 22 kg/m². Recent data of NHANES survey in the United States has shown an increased risk of Type 2 Diabetes Mellitus at all times up to 6-10-fold in 18-year-old individuals with BMI greater than 35 kg/m² compared to individuals with BMI less than 18.5 kg/m² (average difference of 6-7 years from overall life expectancy).3

This study has shown that there was respondent who has minimum WC at 54 cm and maximum WC at 136 cm. The respondents in this study has shown WC Mean at 89.00 cm. Waist circumference is categorized to be high risk in men ≥90 cm and women ≥80 cm. Fat in the abdominal or visceral areas is closely associated with an increased risk of Type 2 Diabetes Mellitus and cardiovascular disease. This disease is preceded by a syndrome called metabolic syndrome with symptoms of hypertension, impaired glucose tolerance and dyslipidemia.9

The overview of fasting blood glucose level in this study has shown that there was respondent who has minimum fasting blood glucose level at 61 mg/dL and maximum fasting blood sugar level at 481 mg/dL. The respondents in this study showed a fasting blood sugar level Mean at 108.82 mg/dL. According to 1 and 12, one of the diagnostic criteria of Diabetes Mellitus is someone who has classic Diabetes Mellitus symptoms plus has fasting plasma blood glucose ≥126 mg/dL (7.0 mmol/L). Long-term Diabetes Mellitus leads to a series of metabolic disorders that cause macrovascular and microvascular pathological disorders. Microvascular complications associated with Diabetes Mellitus include retinopathy, nephropathy and neuropathy. While macrovascular complications in large blood vessels of Diabetes Mellitus patients are stroke and coronary heart
People with Diabetes Mellitus face an increased risk of developing cardiovascular, cerebrovascular, peripheral vascular disease and ultimately largely ending with death. Respondents who were categorized as having normal blood glucose should keep their diet and physical activity to avoid the risk of Diabetes Mellitus. Prevention activities should be an important activity to prevent new cases of Diabetes Mellitus. A person who has already suffered Diabetes Mellitus is incurable and vulnerable to compassion and not least ending in death.

2. The overview of relationship between BMI and fasting blood glucose level based on medical check up result of PT. X Regional Jakarta employees in 2016

Based on p value = 0.01, p value <0.05 from Tabel 3, there was a relation between BMI to fasting blood glucose level. Correlation coefficient (correlation power) $r = 0.08$ has shown that Spearman correlation value between two variables was positive with weak correlation. Positive correlation means the greater the value of a variable (BMI), the greater the value of other variables (fasting blood glucose level).

This is in line with research conducted by. Research conducted in July 2012 has shown that there was a relation between BMI and fasting blood glucose level in Type 2 Diabetes Mellitus patient with p <0.001 and Spearman correlation 0.459 which indicated positive with medium correlation strength. This result was also in line with research conducted by in “Waist Circumference Having the Strongest Relationship with Blood Glucose Levels” has shown BMI variable p value <0.05 with positive correlation coefficient. In other words, there was a significant positive relationship between BMI and blood glucose levels. The higher BMI the higher blood glucose level, the lower BMI the lower blood glucose level. This was consistent with the theory of that the risk factor of Type 2 Diabetes Mellitus is obesity which includes changes in lifestyle from traditional to western lifestyle, overeating, and sedentary lifestyle.

3. The relationship between Waist Circumference (WC) and fasting blood glucose level based on medical check result of PT. X Regional Jakarta employees year 2016

Based on p value = 0.01, p value <0.05 from Table 4, there was a relationship between WC and fasting blood glucose level. Correlation coefficient (correlation power) $r = 0.10$ has shown that Spearman correlation value between two variables were positive with weak correlation power. Positive correlation means the greater the value of a variable (WC), the greater the value of other variables (fasting blood glucose level).

This is in line with research conducted by that indicated WC positively correlated with blood glucose level. The correlation test between BMI, WC and blood glucose level showed that the two independent variables were statistically significant. When viewed from the correlation coefficient Spearman where the relation between WC and fasting blood glucose level has the highest correlation coefficient of 0.104 compared to the correlation coefficient between BMI with fasting blood glucose level of 0.082. The correlation coefficient close to 1 indicates that there was a stronger relationship between WC and fasting blood glucose level compared to the relationship between BMI and fasting blood glucose level.

The results of the study were as stated by that measuring WC is recommended. Measurement of WC alone can replace the ratio of WC and BMI as a single risk factor for all cases of morbidity. Reduced abdominal circumference significantly decreases cardiovascular risk factors, metabolic syndrome including Type 2 Diabetes Mellitus, impaired glucose tolerance, hypertension and dyslipidemia despite unchanged weight. Increased WC, especially in abdominal or android obesity, can lead to insulin resistance that can cause Diabetes Mellitus.

In abdominal obesity occurs insulin resistance in the liver resulting in increased Free Fatty Acid (FFA) and oxidation. FFA causes glucose metabolism, both oxidatively and non-oxidatively, to interfere with peripheral tissue glucose. Increased FFA in obese people generally occurs due to adipose tissue lipolysis process more often than normal people. An increase in the amount of visceral (abdominal) fat has a positive correlation with hyperinsuline and is negatively correlated with insulin sensitivity. Abdominal obesity was significantly associated with dismetabolic syndrome (dyslipidemia, hyperglycemia, hypertension), which is based on insulin resistance.
Conclusion

From “The relationship between Body Mass Index (BMI) and Waist Circumference (WC) to fasting blood glucose level based on medical check up result of PT. X Regional Jakarta employees Year 2016”, it can be concluded as follows:

1. There were 1,225 obese respondents based on BMI, and 184 of them were categorized suffering from Diabetes Mellitus.
2. There was a weak relationship with positive pattern between BMI and fasting blood glucose level. This means that the higher BMI the higher fasting blood glucose level. Determinant coefficient value 0.007 indicates that BMI affects fasting blood glucose levels of 0.7% and the rest 99.3% fasting blood sugar levels are influenced by other variables. Variables of fasting blood glucose levels will increase by 0.848 mg/dL for each 1 kg/m^2 BMI increased.
3. There was a relationship between WC and Diabetes Mellitus on respondents. PR = 1.47 (95% CI: 1.21-1.80) showed that abdominal obesity respondents had 1.5 times higher risk of Diabetes Mellitus compared to non abdominal obesity. Correlation coefficient (correlation power) r = 0.10 has shown that Spearman correlation value between two variables were positive with weak correlation power. Positive correlation means the greater the value of a variable (WC), the greater the value of other variables (fasting blood glucose level).
4. The correlation test between BMI, WC and blood glucose level showed that the two independent variables were statistically significant. When viewed from the correlation coefficient Spearman where the relation between WC and fasting blood glucose level has the highest correlation coefficient of 0.104 compared to the correlation coefficient between BMI with fasting blood glucose level of 0.082. The correlation coefficient close to 1 indicates that there was a stronger relationship between WC and fasting blood glucose level compared to the relationship between BMI and fasting blood glucose level.

Acknowledgment

Sincerely thanks to The Head of School of Health Sciences Jenderal Achmad Yani, Cimahi, Indonesia and all of our colleagues at Public Health Study Programme for the supports.

References

ADA (American Diabetes Association), Standards of Medical Care in Diabetes-2015. Diabetes Care


Identification Of katG Gene from Mycobacterium Growth Indicator Tube (MGIT) Culture

1Sitti Romlah*, 2Prima Nanda Fauziah, 3Rina Heryawan, Arif Khozinul Asrori4

1,2,4Department of Medical Laboratory Technology, STIKES Jend. Achmad Yani
3Clinical Pathology Department, Rotinsulu Hospital, Cimahi-Indonesia
*Email: keemov@gmail.com

Abstract
Tuberculosis (TB) is a respiratory infection of the respiratory tract caused by Mycobacterium tuberculosis. There are currently many strains of M. tuberculosis resistant two or more anti-tuberculosis drugs (OAT) known as the Multiple Drugs Resistant M. tuberculosis (MDR-MTB). One of the marker genes for MDR-MTB is the katG gene. KatG gene mutations cause loss of the activity of the Mycobacterium tuberculosis catalase - peroxidase enzyme so that these bacteria become resistant to isoniazid (INH) OAT. The purpose of this research is to know the existence of katG genes in isolate Mycobacterium tuberculosis from culture MGIT. Sample used is MGIT isolate with amount of 25 samples then amplification using PCR method and electrophoresis. The results showed that there were 4 DNA samples suspected by katG genes measuring ± 317 bp from MGIT cultured samples. Based on the results of this study it can be concluded that the katG gene was successfully amplified by PCR method with primary forward and reverse primer visualized by electrophoresis.

Keywords: Tuberculosis, MGIT, PCR, INH, MDR

Introduction
The prevalence of pulmonary tuberculosis has declined significantly in recent years, but the number of people with pulmonary tuberculosis in Indonesia is still high because the number of TB patients in Indonesia is ranked fourth most worldwide after China, India and South Africa (WHO, 2014). The MDR-TB score is estimated at 2% of all new TB cases. There are approximately 6,300 cases of MDR TB each year (Kemenkes, 2011). MDR-TB occurs because of mutations in the M. tuberculosis gene. In the scientific development of these mutations, research has been done on several genes responsible for isoniazid resistance (INH) (Silva and Palomino, 2011). The mutations in one or more genes, such as katG, kasA, oxyR-ahpc, furA, theseA, theseB, theseC, ndh, and inhA are the cause of resistance to INH (Syafudin et al., 2009). Due to the impact of increased MDR-TB and the limited number of therapeutic agents, attempts were made to determine the molecular basis of M. tuberculosis resistance to OAT. It is intended that resistance to anti-tuberculosis drugs can be known immediately and patients can be treated with appropriate treatment quickly and precisely (Siregar,2015). The identification of katG gene in M. tuberculosis bacteria cultured in Mycobacteria growth indicator tube (MGIT) was performed as a first step to find out MDR-MTB cases in patients, so that it can be done more quickly and precisely.

Method
Sterile aquadest, primer forward 5’-GAAGTACGGCAAGAAGCTCTC-3’dan reverse 5’-CGTGATCCGCTATACATGCG-3’, MGIT medium, Agarose Thermo 00270341, MgCl2 (Thermo), Taq Polymerase (Invitrogen), buffer 10x (Invitrogen), dNTP 10 mM (Invitrogen), Marker DNA 1kb (Fermentas), glacial acetic acid (Merck), Tris Base (J.T. Barker), EDTA (J.T. Barker) and ethidium bromide (Merck).

Procedure:
1. DNA isolation was done by using boiling water method. The way of work on DNA isolation is : A total of 100 uL taken suspension of culture MGIT positive, then heated at
95 ° C for 15 minutes. To separate the supernatant and the sediment was centrifugated for 15 minutes at 12,000 rpm. Supernatant was taken for mold at PCR.

2. Calculation of DNA concentrations with nanodrop. Nanodrop 200 Thermo Scientific Spectrophotometer can be used to determine the concentration and purity of DNA. This tool is very sensitive and requires only 2 uL sample volume for each maesurment.

3. DNA amplification

DNA amplification was performed using the Polymerase Chain Reaction (PCR) method. The principle of this method is : doubling the DNA with the help of enzymes. To obtain a piece of DNA, a primary primer that serves to mark the DNA to be duplicated. Primary forward to mark the front end of the DNA strand while the reverse primer to mark from the rear end. Primer forward 5’-GAAGTACGGCAAGAAGCTCTC-3’ with conditions Tm 55,4% and 52,4%. Primer reverse -CGTGATCCGCTCATAGATCG-3’ with 55% Tm and 55% GC content can be seen in Appendix 3. In principle PCR is a repeatable process with several cycles. Each cycle consists of 3 stages namely Denaturation, Annealing and Extension. The way of work on DNA amplification is : Solution Mix solution for 1 sample prepared as in Table 1. The loaded PCR tube is then fed into the thermal cycler and set the conditions for DNA amplification. Amplification was performed on Automated thermal cycler with cycles including initial denaturation of 95 ° C for 15 min followed 40 cycles consisting of denaturation at 95 ° C for 15 Minutes, annealing at 56 ° C for 1 Minute 20 sec and Primary extension at 72 ° C for 2 Minutes and extension end at 72°C for 10 minutes (Daniarsihet al., 2013).

<table>
<thead>
<tr>
<th>Composition</th>
<th>Initialy concentration</th>
<th>Final concentration</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primer KG24F</td>
<td>10 Mm</td>
<td>0,5 mM</td>
<td>1 uL</td>
</tr>
<tr>
<td>(5’GAAGTACGGCAAGAAGCTCTC-3’)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primer KG60R</td>
<td>10 Mm</td>
<td>0,5 mM</td>
<td>1 uL</td>
</tr>
<tr>
<td>(5’-CGTGATCCGCTCATAGATCG-3’)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dNTPs</td>
<td>10 mM</td>
<td>5 mM</td>
<td>1 uL</td>
</tr>
<tr>
<td>Buffer PCR</td>
<td>10 X</td>
<td>1 X</td>
<td>5 uL</td>
</tr>
<tr>
<td>Taq polymerase</td>
<td>5 U1</td>
<td>0,025 ng</td>
<td>0,25 uL</td>
</tr>
<tr>
<td>DNA template (sample or control)</td>
<td>-</td>
<td>-</td>
<td>1 uL</td>
</tr>
</tbody>
</table>

ddH2O                | -                      | -                   | Added up to volume 50 uL

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Total Σ=</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50 uL</td>
</tr>
</tbody>
</table>

4. DNA Electrophoresis

5 uL homogenized PCR product with 1uL dye loading, entered into well/agarose gel well. Perform electrophoresis with 50 volt for 60 minutes. After electrophoresis, gel is removed and immersed in a solution of Etidium bromide for 5 minutes and then washed with aquades by soaking for 5 minutes. Take a look at uv transluminator tool.

Result

This study used 25 bacterial culture samples of *Mycobacteria growth indicator tube* (MGIT). The samples were from patients with acid-resistant bacteria (BTA) and MGIT results varying the examination of BTA and MGIT. From the culture of MGIT, the calculation of DNA
concentrations using nanodrop, from 25 samples obtained range 0.5-840 ng/ul and purity with a range of 0.26-1.8. Amplification was performed using PCR with cycles according to the use of forward primers and reverse genes \textit{katG} genes to multiply \textit{katG} genes from \textit{Mycobacterium tuberculosis}, electrophoresis results can be seen in Figures 1.2 and 3.

![Fig 1 Result of electrophoresis sample product No 1-10](image)

![Fig 2 Result of electrophoresis sample product No 11-20](image)

![Fig 3 Result of electrophoresis sample product No 21-30](image)
Discussion

Based on the amplification results of 25 MGIT isolate samples, there were 4 positive samples of suspected KatG gene estimated to have a size of 317pb, after analysis in silico. Calculation of concentration and purity of DNA using nanodrop, obtained DNA concentration in the range of 0.5-840 ng / ml and DNA purity ranged from 0.26-1.8. DNA purity was obtained from the absorbance ratio of A260 / 280. The DNA molecule is said to be pure if the ratio of these two values ranges from 1.8 to 2.0. If the DNA with a ratio of such a range of numbers means it has met the purity requirements that have been required in molecular analysis. If there is contamination of proteins and other organic matter characterized by a low ratio value of A260 / 280, on the contrary if there is contamination of phenol characterized by a high ratio value of A260 / 280 (Pranawaty & Liviawaty, 2012). DNA extraction results in this study there are several the sample had a ratio value below 1.8 indicating the presence of protein contamination (Azhar et al., 1996).

Based on the data obtained, there was a negative MGIT culture result but at the time of PCR results showed positive as much as 2 samples (8% of the total sample). Studies conducted in Bangladesh evaluated PCR accuracy against M. tuberculosis cultures, where the results showed that PCR sensitivity was 92% and specificity 70% (Negi et al., 2005). In addition, studies in India showed that PCR sensitivity and specificity in adult TB patients was 74.4% and 97.3%. The meta-analysis data that evaluated the study of PCR for TB diagnosis in adult TB patients with smear negative showed that PCR sensitivity had a range of 9-100%, and specificity ranged from 25-100% (Sarmiento et al., 2003).

28 % (7 samples from total sample) have result positive MGIT and negative PCR. The possibility of the results is negative PCR because in MGIT culture not only for Mycobacterium tuberculosis but Mycobacterium tuberculosis complex, and also can be caused by isolation using the boiling water method DNA isolation becomes damaged by using heating method, and also usually due to more the purity of DNA that is not optimum because more impurities than DNA. These seven samples are suspected to be a sample of non MDR M. tuberculosis against INH (isoniazid) because no band katG gene was obtained after PCR.

Conclusion

KatG gene identification was successfully performed using isolates from MGIT culture. MGIT culture has advantages that is relatively short culture time that helps the diagnosis of tuberculosis. Enforcement of tuberculosis diagnosis using culture examination takes 3-6 weeks, but by PCR method can reduce the duration of tuberculosis diagnosis.

Acknowledgment

Thanks to civitas akademik Stikes Jenderal A Yani Cimahi and Clinical Pathology Department, Rotinsulu Hospital, Cimahi-Indonesia

Reference

Becton dickinson,(1999)“cara deteksi cepat mycobacteria dengan MGIT”.. 1-30
Mycobacterium tuberculosis Pada Penderita Suspek TB Di Makasar. Makasar. Universitas Hasanudin


Maria Lina R, Budiman Bela, dan Andi Yasmon (2009). Deteksi Mutasi Gen KatG Mycobacterium Tuberculosis Dengan Metode PCR (Polimerase Chain Reaction ) – Hibridasi Dot Blot Menggunakan Pelacak Oligonukleotida Bertanda


Rudiretna, Ari, and Darmo Handoyo.(2001) "Prinsip Umum dan Pelaksanaan Polymerase Chain Reaction (PCR)." Unitas, Vol. 9, No. 1; 17-29.


317
Description of Serum Uric Acid Levels in Mid Elderly Patients Diagnosed Diabetes Mellitus

Ellsie Viendra Permana, Sussylawati Kasiman, M.Novi Dwi Kristi Astuti

Department of Medical Laboratory Technology, STIKES Jend. Achmad Yani
Clinical Pathology Department, Cibabat Hospital, Cimahi-Indonesia
*Email: ellsie.v.permana@gmail.com

Abstract

Uric acid is a final product of nucleic acid catabolism which its level is frequently suggested to be correlated with glucose metabolism. However, several studies examined serum uric acid (SUA) level – Diabetes mellitus (DM) association are not consistent. The present study was undertaken to describe SUA levels in mid elderly patients diagnosed DM at hospital-X Cimahi City, West Java Province. This was a descriptive study, involving 30 patients diagnosed DM, without shorting out of under treatment patients or newly diagnosed patients. The mid elderly patients were in a range age of 45-59 years old, who were of either sex and randomly in number. Blood samples were drawn and were investigated for SUA levels. Data of fasting blood sugar was also collected as secondary data, taken from patient’s medical record. The values were described to fasting blood glucose (FBG) levels, with several parameters involved. As much as 3.3% patients had serum uric acid levels lower than normal range, 66.7% in the range, and 30% higher than normal range level. Although normal SUA level group were dominant, the hyperuricemia group were also significant. The result of total data found no association between SUA levels with FBG levels with p-value > 0.05. This condition might be caused by several parameter involved, such as DM time period and DM therapy. The notion is proposed based on observed data showing 77.8% of patients with hyperuricemia were undergoing insulin therapy, which is confirmed by SUA level – therapy type association with p-value of 0.034. Furthermore study shows firm association between FBG level and UA level of insulin therapy patients only, with p-value of 0.01. Therefore, further experiment affirming insulin therapy – UA level association with comprehensive data is required.

Key words: diabetes mellitus, serum uric acid, mid elderly patient, therapy.

Introduction

Most Indonesian people are in productive age mostly until they reach 56-65 years old. While mid elderly stage is the crucial productive phase mostly facing issues of gout(Bolzetta et al., 2013). Gout is a medical condition of acute inflammatory arthritis, with symptom as red, tender, hot, and swollen joints(Jin, 2012). Hyperuricemia (uric acid level above normal) is the valuation of gout. Although gout and hyperuricemia are not the same thing, but hyperuricemia is considered as the precursor of gout(Choi and Ford, 2008)(Roubenoff et al., 1991). Uric acid as a final product of nucleic acid catabolism are suggested to be associated with glucose metabolism(Yoo et al., 2005). An elevation of uric acid level is one of a risk factor for insulin resistance(Dehghan et al., 2008)(Lippi et al., 2008). However, several studies examined serum uric acid (SUA) level – Diabetes mellitus (DM) association are not consistent(Bandaru and Shankar, 2011)(Kramer et al., 2009)(Kodama S, Saito K, 2009)(Modan et al., 1987). Therefore, the present study aimed (Eliana, 2015)to describe serum uric acid (SUA) levels in mid elderly patients diagnosed Diabetes mellitus (DM), from hospital-X Cimahi City – West Java Province.

Mid elderly people as described by World Health Organization (WHO) are those in between 45-59 years old(World Health Organization, 2013). Patient with Diabetes mellitus was defined as ever diagnosed DM in medical record. In the previous patient examination, DM was defined as fasting glucose blood level ≥126 mg/dL, non-fasting glucose blood level ≥200 mg/dL, or use oral hypoglycemic medication or insulin(PERKENI, 2011).

In this descriptive study, 30 patients diagnosed DM were examined, without shorting out of under treatment patients or newly diagnosed patients. The mid elderly patients were in a range age of 45-59 years old, who were of either sex and randomly in number. Blood samples were drawn and were investigated for SUA levels. Data of fasting blood sugar was also collected as secondary data, taken from patient’s medical record. The values were described to fasting blood glucose
Methods

The present study was undertaken in the Department of Medical Laboratory Technology, Clinical Chemistry Laboratory, in collaboration with Clinical Pathology Department of X-Regional Public Hospital in Cimahi-Indonesia. Data collection process was conducted between February 2017 and March 2017. This was a descriptive study, with population of all mid elderly (in the age group of 45-59 years old) outpatients came to the Hospital in February 2017. The subjects who were included in this study involves 30 patients diagnosed Diabetes mellitus (DM), without shorting out of under treatment patients or newly diagnosed patients, who were of either sex, and randomly in number. Informed consents were taken from all of the subjects who were included in this study. There were no distinction in taking subjects between patients diagnosed type 1 DM and type 2 DM.

Veins blood samples were drawn and were investigated for SUA levels as primary data. Fasting blood sugar level was also collected as secondary data, in which taken from patient’s medical record. Serum uric acid (SUA) levels was estimated by an uric acid enzymatic colorimetric method(Galbán et al., 2001). An examination of uric acid control was done before running sample measurement, using Humatrol with LOT number 0003. As much as 1000µL uric acid reagent was added into tubes containing 25 µL control serum and standard uric acid respectively. An incubation was done for 10 minutes in 37°C, before measurement using MINDRAY BA-88A Photometer at 670nm wavelength. Normal value level for Humatrol was 3,9 – 4,7 mg/dL, while the pathological value level was 8,5 – 10,26 mg/dL. The measurement was conducted in several days, with uric acid control done for each measurement. For serum uric acid assay, as much as 1000 µL uric acid reagent was added into tubes containing 25 µL serum sample and 25 µL standard respectively, which then incubated and read at the same condition with control procedure. Hyperuricemia was defined as serum uric acid levels ≥ 7.2 mg/dL for men and ≥ 6.0 mg/dL for woman. Meanwhile, hypouricemia was defined as serum uric acid levels ≤ 3.5 mg/dL for men, and ≤ 2.6 mg/dL for woman.

The basic characteristics of the sample were described by descriptive statistics. The difference between the SUA level with FBG level and with therapy type were respectively analyzed using Spearmen’s rho correlation test. The difference between FBG level and SUA level of patient with insulin dependent was evaluated using chi square test. All values were interpreted according to a significance level of 95% (CI 95%, P < 0.05). All statistical methods were performed using MS.Excel for Windows 8.1, 2013.

Results

From all thirty mid elderly subjects diagnosed DM of hospital-X, there were 80% women (mean age (± standard deviation) 54.3 ± 3.8) and 20% men (mean age (± standard deviation) 51.0 ± 5.7). Hyperuricemia prevalence in the observed population was 30% (29.2% of women, 33.3% of men).

In evaluation of serum uric acid level with fasting blood glucose, there was no association founded with p-value > 0.05. Meanwhile, 77.8% of the total patient with hyperuricemia were undergoing insulin therapy (insulin dependent).

<table>
<thead>
<tr>
<th>No</th>
<th>Name Code</th>
<th>Age</th>
<th>Sex</th>
<th>Hypertension</th>
<th>Serum Uric Acid mg/dL</th>
<th>Notation</th>
<th>Fasting Glucose mg/dL</th>
<th>DM Period (year)</th>
<th>Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>NG</td>
<td>59</td>
<td>F</td>
<td>No</td>
<td>4.94</td>
<td>Normal</td>
<td>155</td>
<td>5</td>
<td>medicine</td>
</tr>
<tr>
<td>002</td>
<td>MA</td>
<td>53</td>
<td>F</td>
<td>No</td>
<td>6.03</td>
<td>Hyperuricemia</td>
<td>161</td>
<td>2</td>
<td>medicine</td>
</tr>
<tr>
<td>003</td>
<td>AK</td>
<td>50</td>
<td>M</td>
<td>No</td>
<td>9.24</td>
<td>Hyperuricemia</td>
<td>84</td>
<td>1</td>
<td>insulin</td>
</tr>
<tr>
<td>004</td>
<td>SM</td>
<td>57</td>
<td>F</td>
<td>Yes</td>
<td>4.01</td>
<td>Normal</td>
<td>110</td>
<td>0.75</td>
<td>medicine</td>
</tr>
<tr>
<td>005</td>
<td>PN</td>
<td>58</td>
<td>M</td>
<td>Yes</td>
<td>7.95</td>
<td>Hyperuricemia</td>
<td>76</td>
<td>4</td>
<td>insulin</td>
</tr>
</tbody>
</table>
According to Diabetes mellitus time period, the study classified SUA data into three groups of suffered period which less than 5 years, in between 5–10 years, and more than 10 years. As much as four (44.4%) patient with hyperuricemia had been diagnosed Diabetes mellitus for less than 5 years.

### Table 3. Classification of SUA group based on DM time period

<table>
<thead>
<tr>
<th>Diabetes mellitus Time Period</th>
<th>Patient Number of SUA Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hypouricemia</td>
<td>Normal</td>
</tr>
<tr>
<td>&lt; 5 Years</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>5 – 10 Years</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>&gt; 10 Years</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

In this study, blood glucose level of diagnosed DM patients were controlled by either medicine or insulin therapy, while medicine type was out of study concern. Association possibilities of serum uric acid levels with undertaken therapy type was also evaluated using Spearman’s rho correlation test as shown at table 4.
<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Uric Acid Correlation Coefficient</th>
<th>Therapy Type Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.000</td>
<td>.388</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

The result shows middle level correlation between SUA with therapy type carried by the subjects with p-value 0.034 (p < 0.05) and correlation coefficient of 0.38v8.

Although there was no association found on SUA-FBG level of total data, the evaluation continued to see whether there is any therapy effect moreover regarding insulin. Furthermore the statistic shows firm association between FBG level and UA level of insulin therapy patients only, with p-value of 0.01.

Discussion
The present study shows there were high number of mid elderly subject diagnosed DM having serum uric acid above normal. Although normal SUA level group were dominant, the hyperuricemia group were also significant. The findings of 30% subjects with hyperuricemia distributed to be more in newly diagnosed DM subjects than in subject undergoing diabetes mellitus more than 10 years.

In total analysis of SUA level and FBG level, there was no association can be found showed by p-value >0.05. This result might occur influenced by variation of therapy type which undertaken by all subjects. This condition might be caused by several parameter involved, such as DM time period and DM therapy. The notion is proposed based on observed data showing 77.8% of patients with hyperuricemia were undergoing insulin therapy. However, the data analysis continue to describe whether insulin plays a role in uric acid content of blood. In previous study examining association between serum uric acid level and insulin level in blood, it was observed correlation of both variable(Gill et al., 2013).

Therefore as a result of subgroup analysis, serum uric acid levels were found to be inversely associated with fasting glucose blood level in mid elderly DM subjects with insulin dependent, with p = 0.01. The observed inverse relation between SUA level and FBG level appeared to be potential findings though was not very consistent in the subgroup analysis by DM time period.

It has been reported previously that the SUA level negatively associated with Diabetes mellitus(Oda et al., 2009)(Nan et al., 2007). H. Nan et al founded an increase in blood glucose level were accompanied by a statistically significant decrease in uric acid level. It was also purposed that hyperinsulinemia and insulin resistance enhance the tubular sodium-hydrogen exchange and facilitates the active absorption of uric acid(Nan et al., 2007). Nevertheless, the mechanism leading to the increase uric acid absorption are not clear.

Conclusion
In summary, serum uric acid levels tended to decrease with increasing fasting blood glucose in mid elderly patient diagnosed Diabetes mellitus with insulin therapy. However, relationship between serum uric acid and insulin level in blood of mid elderly DM patient require further investigation.

Acknowledgment
This study has been approved and supported by School of Health Sciences Jenderal Achmad Yani Cimahi and Clinical Pathology Department, Cibabat Hospital, Cimahi-Indonesia.
References


Abstract
The aim of this research is to know the correlation between Atherogenic Index of Plasma (AIP) with high sensitive C protein (hs-CRP) and Asymmetrical Dimethylarginin (ADMA) in type 2 diabetes mellitus (T2DM). Diabetics proven to be more susceptible to atherosclerosis and coronary heart disease (CHD), especially in patients with T2DM have higher risk and mortality for cardiovascular risk factors. AIP is a strong marker to predict the risk of atherosclerosis and CHD. hs-CRP is an acute phase protein produced in the liver, the part of in the immune system response and in acute inflammatory conditions. ADMA is an inhibitor of Nitric Oxide-forming enzymes, may be used as a marker of endothelial function. This research method used cross sectional design. The sample of this research were 80 T2DM patient with inclusion requirement men, age 30-65 years old, fasting glucose ≥ 126 mg/dl, AIC ≥ 6% and willing to sign inform consent. The conclusion that AIP and hs-CRP increased in patients with T2DM (p < 0.001) and there was a significant relationship between AIP and hs-CPR (r = 0.486, p < 0.001). The AIP score was not correlated with ADMA in T2DM subjects (r = -0.007, p = 0.915).

Keywords: ADMA, AIP, atherosclerosis, hs-CRP, T2DM.

Introduction
Diabetes Mellitus (DM) patients in the last decade are increasing, especially in developing countries.1 WHO predicts that by 2025 if this epidemic is not addressed soon there will be a 150% increase in prevalence. According to the International Diabetes Federation (IDF), the number of DM patients in the world, increased and the cost of its management to 3-fold and 1 in 2 people with DM is still undiagnosed. From various epidemiological studies in Indonesia, the prevalence of DM is 1.5 - 2.3% in the population aged more than 15 years (Williams, 1999).

Type 2 diabetes mellitus (T2DM) is a metabolic disorder and typically results from excess of caloric intake over energy expenditure. It is characterized by a progressive insulin secretory defect due to insulin resistance, which increases the body’s demand for insulin in order to retain glucose homeostasis.

Diabetics proven to be more susceptible to atherosclerosis and coronary heart disease (CHD), especially in patients with type 2 diabetes have a higher risk and mortality for cardiovascular risk factors associated with insulin resistance contributing to increased risk of CHD. The condition of dyslipidemia that is very common in patients with type 2 DM is one of these risk factors. Diabetic dyslipidemia is generally characterized by elevated plasma triglycerides (TG) and decreased HDL cholesterol concentrations, as well as an increase in small dense LDL concentrations and apolipoprotein B(Dobiasova, 2004). Aterogenic Index of Plasma (AIP) or Log-defined atherogenic index (TG/HDL-C) is a new marker of atherogeneity because AIP is directly related to the risk atherosclerosis (Dobiasova, 2001).

C-reactive protein (CRP) is not only a marker of inflammatory state, but studies have shown that CRP itself is also involved in the pathogenesis of atherogenesis, plaque destabilization and aterotrombosis process (Pearson, 2003). Considering the fundamental CRP involvement in the incidence of chronic subtle inflammatory processes and the role of CRP which is not merely a marker (biomarker) but also involved in the pathobiology of vascular disorders, hs-CRP factor selection in the analysis of CHD events The inflammatory phase has an important position (Biasucci, 1999).
Asymmetric dimethylarginine (ADMA) is an inhibitor of the Nitric Oxide (NO) enzyme, currently ADMA is a marker of endothelial function. In addition to being stable, ADMA is easily measured, reflecting NO concentrations and also pathobiologically contributing directly to the incidence of endothelial dysfunction (Achan, 2003). The aim of this research is to know the correlation between Aterogenic Index of Plasma (AIP) with high sensitive C Protein (hs-CRP) and Asimmetric Dimethylarginin (ADMA) in T2DM.

Method
The method of research used cross sectional design. The sample of this research are 80 type 2 diabetic patients with inclusion requirement are male, age 30 - 65 years old, fasting glucose examination ≥ 126 mg / dl, A1C ≥ 6% and willing to sign inform consent. Exclusion terms are subjects with impaired renal function, impaired liver enzymes, antioxidants and fat-lowering drugs.

The TG levels in which the sample was taken under fasting conditions were TG levels in blood serum samples measured by the GPO-PAP method, the Modular P 800 (Roche Diagnostic) autoanalyzer tool, the Roche paint reagent no 11730711216 and expressed in mg/dl units. HDL cholesterol levels were HDL cholesterol levels in blood serum samples as measured by homogenous enzymatic method (Daichi pure chemical), Modular P 800 (Roche Diagnostic) autoanalyzer tools, Daich cat no 290268 reagents and expressed in mg/dl units. Hs-CRP levels were hs-CRP levels in blood serum samples as measured by immunochemiluminescence (Siemens) method, Immulite 2000 appliance, Siemens cat reagent no L2CRPA2 and expressed in mg/L units. ADMA levels were ADMA levels in blood serum samples measured by ELISA (DLD Diagnostic, Hamburg, Germany) method, 680 model micro-reader (Roche Diagnostic), DLD Diagnostic paint no EA201/96 and expressed in units of umol/L.

The data obtained is processed through SPSS for Windows program. Analyzes, bivariate and multivariate are performed. The results are narrated and clarified by tables or graphs. For statistical tests, the significance level (significance) used is 5%. The statistical test used to determine the relationship between AIP with hs-CRP and ADMA in patients with T2DM. Pearson correlation test when the data is normally distributed or Spearman test when the data is not normally distributed.

Results
Table 1 shows that there is no significant difference in age, body mass index (BMI), abdominal circumference, systolic and diastolic blood pressure (p <0.05).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>T2DM Average ± SD (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>53.45 ± 6.1</td>
<td>0.05</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>25.1 ± 4.3</td>
<td>0.27</td>
</tr>
<tr>
<td>WZ (cm)</td>
<td>90 ± 11.5</td>
<td>0.39</td>
</tr>
<tr>
<td>SBP (mm/Hg)</td>
<td>127.3 ± 19.4</td>
<td>0.09</td>
</tr>
<tr>
<td>DBP</td>
<td>82.3 ± 7.5</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Notes: BMI = body mass index; WZ = waist size; SBP = Systole Blood Pressure; DBP = Diastole blood pressure; SD = standard deviation; p = probability; unpaired t test *= significant correlation (p<0.05)

Table 2 shows that there are significant differences in fasting blood glucose, A1C, AIP and hs-CRP (p <0.05).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>T2DM Average ± SD (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Value</td>
<td>p-value</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>Fasting blood sugar (mg/dl)</td>
<td>177.7± 34.5</td>
<td>0.02*</td>
</tr>
<tr>
<td>A1C (%)</td>
<td>6.9 ± 0.8</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>AIP (mU/L)</td>
<td>0.47 ± 0.22</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>hs-CRP (ng/ml)</td>
<td>2.86 ± 1.22</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>ADMA (umol/L)</td>
<td>0.74 ± 0.22</td>
<td>0.337</td>
</tr>
</tbody>
</table>

Notes: AIP=Atherogenic Index of Plasma; hs-CRP = high sensitive C reactive protein; ADMA=Asimmetric Dymetilarginin; SD= standard deviation; p=probability; unpaired t test *= significant correlation (p<0.05)

**Figure 1.** The distribution of AIP values to hs-CRP levels

Figure 1., the distribution of AIP values to hs-CRP levels is shown. From the graph shows that there is a relationship between AIP with hs-CRP (r = 0.486, p <0.001).

**Figure 2.** The distribution of AIP values to ADMA levels

...
Figure 2. AIP values are shown to the ADMA levels. From the graph shows that there is no relationship between AIP with ADMA ($r = -0.007, p = 0.951$).

Discussion

Demographic and Biochemical Profile of Research Participants

From the analysis of general descriptive data (Table 1), there were no significant differences in age, body mass index (BMI), abdominal circumference, systolic and diastolic blood pressure ($p <0.05$). It can be explained that age, body mass index (BMI), abdominal circumference, systolic and diastolic blood pressure were not significantly different due to the collection of samples from the equivalent population.

While the parameters of fasting blood sugar, A1C, AIP and hs-CRP, showed a significant difference ($p <0.05$) (Table 2), because in patients with T2DM diabetic dyslipidemia worse and characterized by an increase in fasting blood sugar, A1C, triglycerides, and decreased HDL cholesterol. The presence of hypertriglyceridemia will increase hepatic lipase activity (HL) with a result of increased HDL catabolism (decreased HDL levels). Any decrease of 1 mg of HDL will increase the risk of CHD by 2, 8,9.10.

Relationship between AIP with hs-CRP and ADMA

AIP values correlated well with hs-CRP ($r = 0.486, p <0.001$). This is consistent with a number of epidemiological studies that find an inverse relationship between HDL and CRP concentrations. Some anti-inflammatory properties of HDL may suppress CRP synthesis in the liver11. In T2DM patients will experience diabetic dyslipidemia, generally characterized by elevated plasma triglyceride (TG), decreased HDL cholesterol concentration, increased small dense LDL concentrations, and Apolipoprotein B. (Dobiasova, et al., 2001). This reduced HDL cholesterol condition will increase CRP synthesis. This is supported by the research on Air Force / Texas Coronary Prevention Study (AFCAPS / TexCAPS) which lasted for 5.2 years found the speed of CHD on HDL $\geq 40$ mg/dl: 2.1%, HDL 35-39 mg/dl: 2, 9%, HDL $\leq 34$ mg/dl: 3.4% 12. This shows That in T2DM there will be more severe diabetic dyslipidemia and this condition is directly proportional to the more severe inflammation. In the inflammatory state induced release of cytokines, thus causing changes in metabolism and HDL cholesterol composition (decrease Apo A1, LCAT and PLTP). Changes in the expression of some enzymes are important because they are involved in reverse cholesterol transfers that will cause impaired cholesterol from the cells and uptake cholesterol to the liver. AIP scores do not correlate with ADMA in T2DM subjects ($R = -0.007, p = 0.951$). This is consistent with a 2006 cohort study conducted by the American Association for Clinical Chemistry (AACC) in 2006 on a number of individuals with various atherosclerotic risk variations, including type 2 DM, hypertension, and dyslipidemia, with TG levels of 145 to 194 mg/dl: 1018, p = 0.872 and HDL cholesterol of 41-49 mg/dl (n = 644, p = 0.2) AIP is the log ratio (TG / HDL-C) directly related to the risk of atherosclerosis. In T2DM subjects will experience diabetic dyslipidemia, generally characterized by elevated plasma triglycerides (TG), decreased HDL cholesterol concentration, increased small dense LDL concentrations, and Apolipoprotein B3. While ADMA is a natural amino acid that circulates in the blood13. ADMA is an endogenous inhibitor of NO synthase (NOS), consequently ADMA inhibits NO formation so that endothelial cell function in regulating blood pressure rhythm is impaired (Vallance, 2004).

Conclusion

It was found that AIP and hs-CRP increased in patients with type 2 DM ($p <0.001$) and there was a significant relationship between AIP and hs-CRP ($r = 0.486, p <0.001$). In addition, increased AIP and hs-CRP may increase the risk of atherosclerosis in patients with type 2 diabetes mellitus.

Acknowledgment

This research becomes a reality with the kind support and help of many individual. I would like to extend my sincere thanks to all of them. I am highly indebted to PT Prodia Widyahusada for their financing, guidance and constant supervision as well as for providing necessary information regarding this research. I would like to express my special gratitude and thanks to my adviser, Prof. Dr. dr Marsetio Donosepoetro, Dr. dr. Ilhamjaya Patellongi, and dr. Mansyur Arief,
PhD for imparting his knowledge and expertise in this research. My statistician, Mr Miswar Fattah for sharing his knowledge and technical know-how.

References
Optimization of Antibody Isolation Collected From Hyperimunized Rabbit using Ammonium Sulphate With and Without Centrifugation

Diki Hilmi*, Ellsie Viendra Permana, Sitti Romlah, Wikan Mahargyani, Sugito, Bayu Pandi Segara

Abstract
Antibody utilization for many purposes are increased nowadays especially in medical applications such as disease therapy and biochemical assay for diagnosis as well as in research applications. Antibody produced in animal previously purified by various process in order to achieve good quality including isolation, purification and poolishing step. This study aim at gaining optimal condition for antibody isolation from rabbit serum after hyperimunization. Hyperimun serum collected from rabbit immunized by HCG was isolated using various concentration of ammonium sulfat from 20% to 80% with centrifugation while another serum collected from rabbit immunized by IgY was isolated without centrifugation. Pellets of each groups were dialysed and characterized by SDS-PAGE. We found that optimum concentration of ammonium sulphate to isolate serum antibody with centrifugation was achieved at 60%. Additionally, we found that optimum concentration to isolate antibody without centrifugation was achieved at 40% after incubation for 8 hours stepwise.

Key words: ammonium sulphate, antibody isolation, HCG, IgY, optimization

Introduction
Antibody nowadays has been widely used for many purposes such as medical diagnosis applications, therapeutic, and immunochemical techniques in general research. Antibody can be produced by immunize animal using spesific antigen and harvested after some incubation times through animal’s blood collection and serum preparation known as hyperimun serum (Graham, 1995). There are many kinds of protein in serum including antibody therefore some processes have to be conducted in order to obtain ready to use antibody such as isolation, purification and poolishing.

The method of antibody isolation depend on several consideration in purpose of using, type of assay to be perform and source of antibody as well as expected level of purity (Suhartono, 1989). Besides, it is important to recognize some biochemical and physical properties of antibody while sustaining its native structre and reactivity against specific antigen. One common technique for isolating proteins including antibody is salt precipitation. The solubility of antibody is related to the salt concentration of the antibody-containing solutions. This is commonly called salting out so the differences in composition and shape of antibody among other proteins mean that antibody precipitate at certain concentration of salt. Darmawi et.al (2009) used concentration of 60% Ammonium sulphate to isolate IgY from chicken egg yolk immunized by L3 A. galli and obtained 0,875 mg/ml yield of IgY. Different protein composition in rabbit serum from those in chicken egg yolk lead us to this study which aim at achieving optimal condition for isolating antibody from two kinds of rabbit serum immunized by human chorionic gonadotropin (HCG) and chicken IgY. We modify the concentration range of Ammonium sulphate (w/v) from 10% to 80% as well as centrifugation steps in order to avoid intervention on antibody precipitation during the isolation process.

Method
Hyperimun serum from rabbit immunized by HCG prepared then 1 mL was dispensed into microtube. 0,1 gr of Ammonium sulphate (10% w/v) was added into serum while being shaked.
gently. The solutions was incubated one hour at 4°C and centrifugated 1000 rpm for 10 minutes. The pellet was collected while supernatan was followed by Ammonium sulphate addition to achieve intended concentration (w/v) namely 20% to 80% with the same treatment as the first. Each of pellets then were dialysed in aquadest and analysed using SDS-PAGE technique.

Hyperimun serum from rabbit immunized by chicken IgY prepared then 1 mL was dispensed into microtube. 0.2 gr of Ammonium sulphate (20% w/v) was added into serum while being shaked gently. The solutions was incubated four hours at 4°C with no centrifugation step. The pellet was collected while supernatan was followed by Ammonium sulphate addition to achieve intended concentration (w/v) from 40% to 80% with the same treatment as the first. Each of pellets then were dialysed in aquadest and analysed using SDS-PAGE technique. Longer incubation time for eight, twelve, and sixteen hours have also been observed in this study.

Hyperimmune serum from rabbit immunized by chicken IgY prepared then 1 mL was dispensed into microtube. 0.2 gr of Ammonium sulphate (20% w/v) was added into serum while being shaked gently. The solutions was incubated four hours at 4°C with no centrifugation step. The pellet was collected while supernatan was followed by Ammonium sulphate addition to achieve intended concentration (w/v) from 40% to 80% with the same treatment as the first. Each of pellets then were dialysed in aquadest and analysed using SDS-PAGE technique. Longer incubation time for eight, twelve, and sixteen hours have also been observed in this study.

Methods should make readers be able to reproduce the experiment. Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described. Do not repeat the details of established methods.

Results

Results of first optimization on anti-HCG-containing serum with centrifugation step are described in figure 1 as below:

Figure 1. SDS-PAGE analysis of first optimization on anti-HCG-containing serum.
(P1) 10% pellet, (P2) 20% pellet, (P3) 40% pellet, (P4) 60% pellet, (P5) 80% pellet (P6) Marker

Optimization on anti-HCG-containing serum have been shown in Figure 1. A distinct number of band in P4 (60% Ammonium sulphate) indicates less protein can be isolated including antibody (equal to 50 kD). While in other wells there are more bands indicate more proteins precipitate during incubation time. These data might be influenced by centrifugation step that interfere precipitation process of antibody and other proteins. Therefore we continue to next optimization with no centrifugation step.

Results of second optimization on anti-IgY-containing serum with no centrifugation step are described in figure 2 as below:
Figure 2. SDS-PAGE analysis of second optimization on anti-IgY-containing serum. 
(P1) 20% pelet, (P2) 40% pelet, (P3) 60% pelet, (P4) 80% pelet, (M) Marker

Optimization on anti-IgY-containing serum have been shown in Figure 2. A distinct number of band in P2 (40% Ammonium sulphate) indicates only one protein can be isolated namely antibody (equal to 55 kD). While in other wells there are more bands indicate more proteins precipitate during incubation time.

Results of whole optimization on anti-IgY-containing serum were summarized in table 1 as below:

<table>
<thead>
<tr>
<th></th>
<th>Optimization</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4hrs</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 kDa</td>
<td>50 kDa</td>
<td>125 kDa</td>
<td>125 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 kDa</td>
<td>100 kDa</td>
<td>100 kDa</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 kDa</td>
<td>50 kDa</td>
<td>50 kDa</td>
<td>50 kDa</td>
</tr>
<tr>
<td>2</td>
<td>8 hrs</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 kDa</td>
<td>50 kDa</td>
<td>125 kDa</td>
<td>125 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 kDa</td>
<td>100 kDa</td>
<td>100 kDa</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 kDa</td>
<td>75 kDa</td>
<td>75 kDa</td>
<td>50 kDa</td>
</tr>
</tbody>
</table>
Compilation of proteins isolated from each of incubation time were described in table 1. Interesting results seen at 4 hours and 8 hours with 40% concentration of ammonium sulphate, there were two bands of 150 kD and 50 kD that indicate the same protein namely rabbit antibody in native formation (150 kD) and heavy chain fragment (50 kD). We choose 4 hours as an optimum condition than 8 hours to cover the limitation of method in this study.

Discussion
These data from different treatment of optimization confirm that centrifugation step influence precipitation process of antibody after incubation time. Without centrifugation antibody fall down naturally following the gravitation as well as being isolated from other proteins in appropriate concentration of Ammonium sulphate. More efficient salt was obtained (40%) in second optimization due to less proteins precipitate during incubation time and pellet collection. Less bands of protein indicates only antibody precipitate at the time (4 hrs) therefore we can use these results as potential early step in antibody purification from rabbit hyperimmun serum. For instance, antibody purification using hydrophobic chromatography technique will give better yields if we use better sample namely isolated antibody from other proteins in crude sample.

Conclusion
In Conclusion, we found that centrifugation step give different results on yields of antibody precipitation using "salting out" technique therefore in our study optimum concentration to isolate antibody from rabbit hyperimmun serum was achieved at 40% concentration of ammonium sulphate after incubation for 4 hours without centrifugation.

Acknowledgment
We would like to thank The Medical Laboratory Technology Study Programme of Jenderal Achmad Yani Cimahi School of Health Sciences, this work supported by Grant from LPPM of Stikes Jend. A.Yani Cimahi. The manuscript was written based on dataset of Scientific Paper registered in Stikes Jend. A.Yani Cimahi.

References

<table>
<thead>
<tr>
<th>Time</th>
<th>Incubation (h)</th>
<th>150 kDa</th>
<th>150 kDa</th>
<th>150 kDa</th>
<th>150 kDa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>75 kDa</td>
<td>100 kDa</td>
<td>100 kDa</td>
<td>125 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 kDa</td>
<td>50 kDa</td>
<td>75 kDa</td>
<td>100 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50 kDa</td>
<td>75 kDa</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50 kDa</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>16 hrs</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
<td>150 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 kDa</td>
<td>100 kDa</td>
<td>100 kDa</td>
<td>100 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 kDa</td>
<td>50 kDa</td>
<td>50 kDa</td>
<td>75 kDa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50 kDa</td>
<td></td>
</tr>
</tbody>
</table>


Wirahadikusumah, 1989, Biokimia Protein Enzim dan Asam Nukleat, Cetakan keempat, Penerbit ITB.
Population Ageing and The Need of Long Term Care for Older Persons in Indonesia

1Tri Budi W. Rahardjo, 2Dinni Agustin , 3Tri Suratmi, 4Dian Elisabeth Guritno, 5Susiana Nugraha

Centre for Ageing Studies Universitas Indonesia,
Universitas Respati Indonesia,
Ahmad Yani School of Health Sciences

Abstract

Indonesia’s older population is growing at an unprecedented rate throughout the period of 1990 - 2020, as well as experiencing an increase in life expectancy from 66.7 years to 70.5 years. Thus, Indonesia will enter the aging population that is marked with the percentage of elderly (age 60 and above) reaching 10 percent in 2020. Globally, Indonesia ranks fourth in terms of population density, while in the case of the older population, it is ranked 10th. The number of older persons in Indonesia is expected to increase to 28.8 million (11% of the total population) in 2020, and in 2050, amount to 80 million (28.68%). Demographic transition is a process of change in population structure as a result of changes in demographic processes, which are currently being experienced by almost all countries in the world in the form of population aging. The problem of the latter is mainly a result of a decrease in fertility rates and an increase of life expectancy. On the other hand, these conditions will be more severe if the aging of the population is accompanied by a pathological condition. The aging process affects the deterioration due to the risk of various diseases, especially chronic/degenerative. The longer the life of a person, the more the person is prone to experience physical, mental, spiritual, economic and social problems. Based on RISKESDAS (Basic Health Research 2013), the diseases found amongst the older persons in Indonesia include hypertension, osteoarthritis, dental-oral problems, chronic obstructive pulmonary disease (COPD) and diabetes mellitus (DM) (The Ministry of Health of the Republic of Indonesia, 2014). The emergence of various diseases and disorders can lead to functional disabilities in older persons, with more severe conditions requiring the help of others, hence the need of long-term care (long term care/LTC). Disability as measured by the ability to perform activities of everyday life or Activity of Daily Living (ADL) affects approximately 51%, with further increase in the age prevalence. Older persons with mild disabilities form around 51% at age 55-64 years, to 62% at age 65 and above. While severe disability affects about 7% of those aged 55-64 years, rising to 10% at 65-74 years, and 22% at age 75 years and above. The conditions above require health and social service delivery. Therefore health service delivery for the older persons will be conducted in a comprehensive manner, starting from families and communities (integrated health service delivery post for the elderly and home care), first level health service facility (Puskesmas Community Health Center) and referral health service facility (Hospital) in collaboration with other related social sectors.

Key words: Population ageing, Long Term Care, Health and Social services
The global challenge in reproductive health issues; Lesson learnt for a developed country: Japan

Hiromi Eto
Nagasaki University, Japan
Email: heto@nagasaki-u.ac.jp

Abstract
Recently, we are facing women’s later age of marriage and thus older age for first birth, declining birthrate and increasing aging population, increasing technology in medical care, and advancing reproductive techniques. The field of perinatal medicine is also changing. At first, we thought there must be a practical guideline, which midwives can follow, in these changing times, in order to provide safe, comfort, and high quality care throughout the perinatal period. Consequently, The Academy of Midwifery started to develop the “Evidence-based guidelines for midwifery care in pregnancy and childbirth” containing care policies for healthy low-risk women and newborns. We developed clinical questions based on midwifery care, systematic reviews and searched references. Based on a critical appraisal of each reference, we provided the evidence statement and recommendation. In 2016, the 2nd edition was produced; there are 43 clinical question: 13 in the pregnancy section and 30 in the intrapartum section. For the 2nd, we established a System for Enhancing Midwifery Competencies through collaboration among related associations. In the past midwives had no professionally approved mechanism to acquire advanced competencies. Therefore we needed to enhance midwifery competencies in a planned manner. We developed and promoted tools for enhancing midwifery competencies that included suggesting the career paths for midwives. This career path is contained in the Clinical Ladder of Competencies for Midwifery Practice (CLoCMiP). In 2015, we establish the CLoCMiP® Level III certification system. The overview of the system is that it objectively evaluates that midwives have a specified level of midwifery competencies, and reviews and certifies that the CLoCMiP Level III requirements are satisfied. The CLoCMiP® system was supported by the leading midwifery related organizations: Japanese Midwives Association, Japanese Nursing Association, Japan Academy of Midwifery, Japan Society of Midwifery Education, and the Japan Institute of Midwifery Evaluation. In 2016, 11,002 midwives became certified through the CLoCMiP® Level III certification system. Thus ‘Advanced Midwives’ were born. Fidelity to the Evidence-based guidelines for midwifery care and the System of Advanced Midwife will contribute to developing our profession and assuring quality of care by all Japanese midwives.
Carcinogen Substances in Brewing Instant Coffee sold in Bandung Minimarket

1Perdina Nursidika*, 2Sitti Romlah

1,2 Stikes Jenderal Achmad Yani Cimahi

*Email: perdina.sidika@gmail.com

Abstract

Carcinogen are substances that causing cancer because the ability to damage genome and disrupting cellular metabolism process. Carcinogens are able to increase the risk of cancer by change cellular metabolism, interfere biology process, and induces malignant division uncontrol that perform tumor, and damage DNA directly to cell. Carcinogen not only related to chemical product, but it also naturally occur. Food and beverages which process by high heat, including grilling, barbecue, or high temperature machinery. Coffee is favorite beverage, coffee has several good effect to health. But, coffee that process by high temperature like in coffee machine are able to producing carcinogens. To identify the carcinogens in coffee, five samples coffee which sold in minimarket in Bandung has been determined. Samples coffee are came from coffee machine, the coffee machine system are able to collect carcinogens of pyrolisis because the closed system. The coffee was determined by Gas Chromatography Mass Spectrophotometry (GCMS) in di Instrument Laboratorium at Universitas Pendidikan Indonesia Bandung, in December 2013-February 2014. Chromatogram of GCMS showed there are some substances found in sample. One of the substance is known as carcinogens and toxic substances in samples coffee from coffee machine. Nitrosomethane is known as carcinogen.

Key words: Carcinogen, coffee, high temperature, GCMS
Factor Related to Health and Occupational Safety Status of Farmers in Kelantan, Malaysia

Rohi A. Ghazali
Universiti Kebangsaan Malaysia
Email: rohi@ukm.edu.my

Abstract
The agricultural sector in Malaysia contributes significantly to the national economy. However, farmers are exposed to potential hazard while handling pesticides which are routinely used to increase yields and quality of agricultural products. This study was conducted to determine the status of health and occupational safety of farmers in Tumpat, Pasir Puteh and Bachok, Kelantan. This cross-sectional study involved 270 farmers aged between 18 and 75 years old. Quantitative and qualitative methods were used in this study. Purposive sampling method was employed in choosing the locations. Simple random sampling was employed in choosing the respondents from farmers’ name list. Health assessment consists of blood pressure, anthropometry, blood tests, liver function and the presence of pterygium. Nerve conduction threshold, lung function, and identification of trace elements were carried out by using Neurometer CPT / Eagle, Cosmed Quark PFT 2007 spirometry and Inductively Coupled Plasma Mass Spectrometry respectively. Occupational safety status was measured based on personal protective equipment (PPE) practice. Knowledge, Attitude and Practice (KAP) were evaluated using a questionnaire. Qualitative method consists of focus group discussion, in depth interview and participatory approach. A total of 46.2% (n=36) farmers scored low for health, while 60.0% (n=162) farmers showed sign and symptom of pesticide poisoning. Farmers who applied six to seven types of PPE was 67.0% (n=181). A total of 42.6% (n=115) farmers obtained low score for knowledge, 68.8% (n=183) scored high for attitude and 96.7% (n=258) scored high for practice. Knowledge showed a low correlation with the practice of farmers (r=0.215, p<0.001). Knowledge ($\chi^2=20.103$, p<0.001) and practice ($\chi^2=8.279$, p<0.01) showed a significant association with usage of PPE. Practice showed significant association with farmers health ($\chi^2=6.259$, p<0.05). A total of 83.0% (n=139) farmers who claimed to use of face mask showed normal blood glucose ($\chi^2=7.928$, p<0.001), 69.0% (n=119) showed normal blood uric acid ($\chi^2=6.878$, p<0.001) and 67.0% (n=125) do not shows any sign and symptom of pesticide poisoning ($\chi^2=12.486$, p<0.05). A total of 84.0% (n=203) farmers who applied head protection had high blood pressure ($\chi^2=4.769$, p<0.05). Findings from qualitative method revealed improper usage of PPE among farmers such as used of hat and gloves made from cotton fabric which would absorb pesticide. Health and occupational safety status of farmers were affected by multiple factors which include environmental aspect, pesticides exposure, usage of PPE, hygiene practices, nutritional intake and hiring worker. Based on factor analysis, farmers health tests was categorized into 5 groups as followed: i) body mass index and blood pressure, ii) lung function, iii) blood tests, iv) trace element and v) nerve function and acetylcholinesterase level. In conclusion, the status of health and occupational safety of the farmers are worrying and the farmers should continuously be given health education.

Key words: Farmer, health education, pesticides, occupational safety.
POSTER PRESENTER

An Overview of HIV, HBV, and HCV Infections among Tattooed People in Cimahi

Patricia Gita Naully*, Diki Hilmi, Miftah Muhamad Homis, Oktaviani Indah Permata, Rinzani Nurlaili Soviayani

Department of Medical Laboratory Technology, Stikes Jenderal A. Yani Cimahi
*Email: patriciagitanaully@gmail.com

Abstract

Cases of Human Immunodeficiency Virus (HIV) infections are rising in Cimahi; where 100 HIV infections were identified in 2015 and 2016. Although Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) infection rate in Cimahi is not the highest in Indonesia, they possess a prevalence rate of 0.2%. HIV, HBV, and HCV can be transmitted through pregnancy, sexual interaction, blood transfusion, drug use, and tattooing. This study aims to determine the overview of HIV, HBV, and HCV infections of tattooed people in Cimahi. Here, serum from 30 tattooed people in Cimahi were taken. These people met criterias as follows; having a permanent tattoo, not are not injection drug user, never having a free sexual interaction, never having a blood transfusion, and filled an informed consent. Presence of anti-HIV, HBsAg, and anti-HCV was detected by immunochromatography. All testing steps was done in accordance with Regulation of the Minister of Health of the Republic of Indonesia Number 15 Year 2015 on HIV and Opportunistic Infection Testing Laboratory Services. Among the 30 tattooed people (16.7% female, 83.3% male, age range: 17 to 48 years old), 2 persons (6.7%) tested positive for HIV, 2 persons (6.7%) tested positive for HBV, and 1 person (3.3%) tested positive for HCV.

Key words: Anti-HCV, Anti-HIV, HBsAg, Tattoo

Introduction

According to WHO, 36.7 million people estimated are living with HIV and about 325 million people infected with HBV or HCV (Cohen, 2017). As a developing country with large population, Indonesia faces the same problem. Based on a data from Ministry of Health, Indonesia experienced increase in HIV cases with cumulative HIV patients until June 2016 was 208,902 people (Ministry of Health, 2016). Indonesia also have the second highest hepatitis B patients in Southeast Asian, after Myanmar. Based on the results of the Regional Health Research on the study and blood donor screening of PMI, donors estimated among 100 Indonesians, there are 10 people who have been infected with Hepatitis B or C (Ministry of Health, 2017).

The increase in HIV cases also occurred in Cimahi, there were 100 cases were identified in 2015 and 2016 (Cimahi City Health Office, 2017). In contrast to the ever-increasing case of HIV every year, cases of HBV and HCV infection in Cimahi are not too numerous. However, it does not mean residents of Cimahi are free from infection of both viruses. According to the Department of Health, the prevalence of HCV infection in Cimahi is 0.2% (Cimahi City Health Office, 2016).

HIV is a virus in Retroviridae group that attacks the immune system, especially CD4 T cells. HBV is a virus that belongs to the group Hepadnaviridae whereas HCV is included in the group Flaviridae, but they both attack the liver cells (Rees, 2014). Although these three viruses have differences in genetic material and the attacked cells, they have similar transmission paths. All three viruses can be transmitted vertically from mother to child and horizontally through sexual interactions, blood transfusions, injecting drug use, and tattooing using contaminated needles (Patel et al., 2014).
Tattoos are the result of a needle puncture where a number of inks with various colors are injected beneath the skin surface. The larger the size of the tattoo, the more necessary injection. This results in an increased risk of infection. Each injection exposes the needle into the blood and a contaminated injection of the pathogen can spread the infection in people who use the instrument simultaneously. The Shahri et al. (2016) study proved that of 63 patients tattooed in one of the hospitals in Iran, there were four (6.3%) patients positive on HBsAg and PCR-HBV examinations, seven (11%) positive HCV and five people (7.9%) were HIV positive. In addition, as many as 8.45% of tattooed people were shown to have chronic HBV infection (Jahangirnezhad et al., 2011). Through his research, Pallas et al. (1999) proved that of 167 people tattooed in one prison in Spain, there were 43 people who had two infections at once i.e. HIV-HBV and HIV-HCV.

The development of tattoos in Indonesia is quite rapid. The art of drawing pictures in body is not only popular in young people but also by the adults. Formerly tattoos commonly used by men as one way of expressing themselves, but now is also a make-up trend for women (Wardhani, 2017). Usually tattooed body parts are hands, feet, or back, but now make tattoos on the armpits trend is developing (Gusri, 2017). Trend of tattooing also hit the city of Cimahi. Given the ever-increasing case of HIV in the city of Cimahi and the growing trend of tattooing, this study aims to determine the picture of HIV infection, HBV, and HCV in people tattooed in Cimahi.

Methods

This study used cross sectional study method. The research was conducted at Stikes Jendral Achmad Yani Cimahi Laboratory and data was collected from February to March 2017. Before the analysis, all respondents in this study were asked to fill out and sign the informed consent states that the respondents were willing to have their blood checked without any coercion.

Collection of samples and specimens

Sample collection is done by disseminating interview form to group of tattooed people domiciled in Cimahi. The interview form contains questions such as age, gender, education, type of tattoo, number of tattoos, tattooing places, and others. The dissemination of interview forms was conducted to get 30 respondents who fulfilled the following criteria: have a permanent tattoo, do not use intravenous drugs, do not engage in free sexual activity, and never had a blood transfusion. A 3 cc specimen of venous blood was taken with a syringe. Blood is transferred into the tube and centrifuged at 3000 rpm for 15 minutes to obtain serum.

HIV Laboratory Testing

This study uses a laboratory HIV testing strategy II in accordance with Regulation of the Minister of Health of the Republic of Indonesia Number 15 Year 2015 on HIV and Opportunistic Infection Testing Laboratory Services. In the first stage, anti-HIV testing was performed by immunocromatography of HIV MONOTES 1/2 with sensitivity of 99.5%. If the first stage examination shows reactive results, then a second phase of examination using INTEC HIV 1/2 immunocromatography has a specificity of 100%.

HBV Laboratory Testing

The presence of serum HBsAg was detected using MONOTES immunocromatography having 99.3% sensitivity and 98.3% specificity. If the HBsAg test results are positive, follow-up is done with Immunocromatography Answer which has 99% specificity.
HCV Laboratory Testing

The presence of anti-HCV in serum was detected using MONOTES immunochromatography which had a sensitivity of 98.1% and a specificity of 98.9%. Specimens that showed positive results were re-examined with BIOLINE SD immunochromatography that had 100% sensitivity and 99.4% specificity.

Processing and Analysis of Data

Data from laboratory tests for HIV, HBV, and HCV is processed using the formula (Dahlan, 2016):

\[
Y = \frac{X}{N} \times 100\% 
\]

Where:

- \(Y\) = Percentage of positive or negative samples
- \(X\) = Number of positive or negative samples
- \(N\) = Total number of samples

Results

The sample in this study consisted of 25 people (83.3%) male and 5 (16.7%) women, ranged between 17 - 48 years old, and the majority of which finished senior high school (36.67%) (Table 1). Of the 30 people, as many as 19 people (40%) make tattoos more than once and 11 people like to switch between tattoo studios. Based on interviews, there were only 8 respondents (26.67%) who knew that HIV and HBV could be transmitted through the production of unsterile tattoos.

Table 1. Characteristics of Research Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (%)</th>
<th>HIV (+)</th>
<th>HBV (+)</th>
<th>HCV (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Subject</td>
<td>30 (100)</td>
<td>2 (6,67)</td>
<td>2 (6,67)</td>
<td>1 (3,33)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25 (83,3)</td>
<td>2 (6,67)</td>
<td>2 (6,67)</td>
<td>1 (3,33)</td>
</tr>
<tr>
<td>Female</td>
<td>5 (16,7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-25 year old</td>
<td>16 (53,33)</td>
<td>1 (3,33)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>26-35 year old</td>
<td>5 (16,7)</td>
<td>1 (3,33)</td>
<td>1 (3,33)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>36-45 year old</td>
<td>5 (16,7)</td>
<td>0 (0)</td>
<td>1 (3,33)</td>
<td>1 (3,33)</td>
</tr>
<tr>
<td>≥ 46 year old</td>
<td>3 (10)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Education Background</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>8 (26,67)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Junior High School</td>
<td>10 (33,3)</td>
<td>1 (3,33)</td>
<td>2 (6,67)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Senior High School</td>
<td>11 (36,67)</td>
<td>1 (3,33)</td>
<td>0 (0)</td>
<td>1 (3,33)</td>
</tr>
</tbody>
</table>
Laboratory testing results showed two positive (6.67%) positive respondents on anti-HIV testing, two (6.67%) positive on HBsAg examination, and one (3.33%) positive on HCV testing.

**Discussion**

Respondents who had HIV, HBV, and HCV infection in this study were all male with age range from 25-45 years old. From the results it cannot be concluded that men have a higher risk of HIV, HBV and HCV infection than women, because in this study the number of female respondents is less. However, in the study of Shahri et al. (2016) mentioned that men have a higher risk of HIV infection than women with a ratio of 2:1. Other studies have also shown that the prevalence of HIV and HCV infection is higher in males (11.6%) than in women (9.4%) (Muriuki et al., 2013). According to Jahangirnezhad et al. (2011), men tend to have more tattoos than women because of the freer lifestyle, more easily influenced, and regard the tattoo as a symbol of masculinity and the pride of himself. In addition, according to Shahri et al. (2016), men pay less attention to the cleanliness of the tools used during tattooing. Based on these facts then there is a possibility that men have a risk of HIV infection, HBV, and HCV through the production of tattoos that are higher than women.

Viewed from the side of respondents' general knowledge and formal education, respondents who have HIV infection, HBV, and HCV only finished junior high and high school. In addition, they do not have sufficient knowledge of how HIV, HBV, and HCV are transmitted. Similar results were also obtained by Jafari et al. (2012). In his research he mentioned that people who are less educated and do not have knowledge about the dangers of tattoos tend to acquire various diseases through tattooing. Sarma and Oliveras (2013) also mentioned that knowledge and behavior of a person to a disease is one factor that can affect the prevention of the disease.

Judging from the number and place of tattoo studio, respondents who had HIV infection, HBV, and HCV had more than one permanent tattoo and often alternated tattoo studio. Quite a few studies have proven that the risk of HIV infection, HBV, and HCV will increase with the increase in the number of tattoos a person has (Jafari et al., 2012; Jahangirnezhad et al., 2011; Samuel et al., 2001; Shahri et al., 2016). The more surface covered skin tattoo the higher the risk of infection. Jafari et al. (2010) proved that relative risk (RR) for the tattoo relationship with hepatitis risk in people with tattoo area 1-4 cm2 was 5.0, while for tattoo area 20 cm2 was 12.2. Frequently changing tattoo studios can increase the risk of HIV, HBV, and HCV infections because not all tattoo studios apply the correct tattooing procedure as practiced by professionals and use sterile tools (Weild et al., 2000).
From the overall results, it can be seen that the lack of knowledge, the large number of tattoos, and frequent alternating tattoo studios can increase the risk of HIV, HBV, and HCV infections. Therefore, to prevent the increase of these three infections cases, people need educational programs in the community, especially among young people about the dangers of tattooing. When trying to make a tattoo, consumers should be wary of tools that are not sterile. HIV, hepatitis virus, and other blood-spreading pathogens can be transmitted if the tattoo tool used is not sterile (Shahri et al., 2016). In addition, transmission of various types of pathogens through tattooing can be caused by tattoo artists who do not follow well controlled infection procedures such as hand washing, using latex gloves, and cleaning and soaking tattoo tools with disinfectants (Jafari et al., 2010). Therefore, an educational program for tattoo artists that emphasizes the importance of cleanliness of the tools used and the potential spread of infection through contaminated tattoo needles. Owners of tattoo studios and tattoo artists should inform their customers about the risks of tattooing and report any adverse events associated with tattooing to authorized health personnel.

Conclusion

Of 30 respondents consists of 16.7% women and 83.3% of men with age range between 17-48 years old, 2 people (6.7%) were positive infected with HIV, 2 people (6.7% ) were positively infected with HBV, and 1 person (3.33%) were positively infected with HCV. Therefore, it can be concluded that in the collection of tattooed people in Cimahi there are cases of HIV infection, HBV, and HCV.

References

Regulation of the Minister of Health of the Republic of Indonesia Number 5 Year 2015 on HIV and Opportunistic Infections Testing Laboratory Service
Samuel, M.C., Doherty, P.M., Bulterys, M., Jenison, S.A. 2001. Association Between Heroin Use, Needle Sharing and Tattoos Received in Prison with Hepatitis B and C Positivity among Street-recruited Injecting Drug Users in New Mexico, USA. 
Epidemiol. Infect. 127, 475-484.
Abstract
E-catalogue system is an electronic information system accommodating certain list, sort, technical specification and price of goods and services from various government goods and services provider. This e-catalogue system supports the process of implementation of medical equipments procurement. The realization of it has been implemented in 2015 based on the regulation of Government Procurement of Goods and Services Agency number 14 of 2015. The success of e-catalogue implementation on the realization of medical equipments procurement is marked by human resources that have competence and corresponding certificate of goods and services procurement as well as budget policy, adequate facilities, and procurement method which is accordance with the required medical equipments specification. The aim of this research is to know the description of e-catalogue system application towards the performance of medical equipments procurement in accordance with government regulations in order to increase health services at West Bandung District. The method used in this research was qualitative method. Qualitative approach was acquired with interview on the parties related to the management of medical equipment in West Bandung District Health Office. The subjects of this research were Health Office of West Bandung District, Batujajar Public Health Centre and Jaya Giri Lembang Hospital. There were some supporting and inhibiting factors on the implementation of e-catalogue system to procurement of health equipments. The supporting factors were the competent human resources at Health Office and adequate budget. Whereas the inhibiting factors were human resources in health service unit that have not been exposed to training as well as inadequate procurement certificate of goods and services, budget constraints, and internet connection. However, those limitations did not hamper the implementation of e-catalogue system on medical equipments procurement since it was managed well by e-catalogue executive team, monitored and evaluated periodically by Head of West Bandung District Health Office.

Keywords: Qualitative, E-Catalogue, Medical Equipment Procurement

Introduction
Health development is carried out with involvement of various service elements, from the availability of manpower, infrastructure, health budget, implementation methods and applicable laws and regulations. This has an impact for local government to continuously and sustainably improve health development. Along with rapid health development activities, the needs of equipments that support the implementation of health service operations are increasing. Thus it requires a reliable logistics management system. Logistics management system is needed to support health service activities.

E-catalogue system is an electronic information system accommodating certain list, sort, technical specification and price of goods and services from various government goods and services provider. Medical equipments are equipments needed to support health services. There are medical equipments that have high investment value, for example: surgical lighting, radiology equipments, and medical equipments supporting medical activities, such as: tweezers, stethoscope, etc. Medical equipments managed by West Bandung District Health Office are investment medical equipments whose source of funding comes from amended state budget (APBN-P) and amended state budget or regional government budget (APBD). Procurement system of medical equipments uses e-catalogue system.

The management of investment medical equipments at West Bandung District Health Office is an activity to fulfil health service needs at the Hospital and Public Health Centre is West Bandung District. The goods administered have to be carried out with appropriate procurement of
goods and planning system in supporting health services to the community. Based on 2010 and 2014 researches it is mentioned that the completeness of primary service infrastructure facilities is only 70%.

Based on this matter, Public Health Centre as primary health care centre needs to get medical equipments supporting health services. Public health center requests medical equipments to West Bandung District Health Office, which in its implementation, health equipments procurement is carried out by Procurements Service Unit. The enforcement of medical equipments procurement before 2015 has not used e-catalogue system thoroughly, so that it still used to apply direct auction/ procurement system, with the result that procurement took a long time, was less effective, and potentially had allegation of fund inflation. Therefore, by 2016, the implementation of medical equipments procurement with e-catalogue system is fully implemented, based on presidential regulation (perpres) number 4, 2015 on procurement of goods and services, and Government Procurement of Goods and Services Agency number 14, 2015.

The purpose of this research is to know the description of the performance of logistic management of medical equipments with e-catalogue system for improvement of health service with the specific purpose of knowing the description of supporting and inhibiting factors of the implementation of medical equipments management with e-catalogue system.

Method

The method used in this research was qualitative method. Qualitative approach was acquired with interview on the parties related to the management of medical equipment in West Bandung District Health Office. The subjects of this research were Secretariat Field, Head of Sub Personnel and general, and coordinator of goods executing at Health Office, Public Health Centre, and Hospital in West Bandung.

The variable in this research was the implementation of e-catalogue system in management of medical equipments logistic at West Bandung Health Office. The stages of analysis performed are as follows:

<table>
<thead>
<tr>
<th>Input</th>
<th>Process</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Human resource</td>
<td>Procurement</td>
<td>Performance of medical equipments</td>
</tr>
<tr>
<td>2. Money/Budget</td>
<td>of medical equipments procurement</td>
<td></td>
</tr>
<tr>
<td>3. Method</td>
<td>with e-catalogue system</td>
<td></td>
</tr>
<tr>
<td>4. Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Infrastructure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fig 1. Implementation of e-catalogue system**

The data collection in qualitative research is done naturally. Primary data source and more data collection technique also take part (participation observation), in depth interview, and documentation (Sugiyono, 2008; 403). The procedure and data processing used in this research using triangulation is expected to obtain accurate data by studying the data obtained in order to establish justification on the theme/topic of research coherently (interrelated logically) (Creswell, 2009; 1994).

Results

1. Human Resource

Human resource is an individual who works as activator of an organization both institutions and companies and serves as an asset whose abilities must be trained and developed. Human resource is the most important asset and is a tool to gain competitive advantage which, if managed properly, will provide many contributions that result in organizational effectiveness (Kaswan, 2010).

Management of health equipments at West Bandung District Health Office is carried out by Commitment Making Official (PPK), ordering official, procurement official elected by West Bandung District Health Office. In the management of medical equipment, all government agencies are required to comply with the Minister of Home Affairs Regulation number 19 of 2016 governing the guidelines on the management of regional property and guidelines on the procurement of goods and services. Commitment Making Official (PPK) takes a strategic role on goods and services procurement, among them is to determine the own price forecasts and determine the specification of the required goods.
Here are some phrases from resource persons on the availability of Human Resource on the process of planning and implementation of goods management. 

“There are 1 treasurer of goods and 3 procurement officers who already have certification of procurement of goods and services” .... (Health Office informant) 

“The treasurer of the goods at Public health center is held by the midwife, so it is not in accordance with the educational background, there are double jobs” .... (Public health center informant) 

“The treasurer of the goods at the hospitals is held by one person, with limited energy and limited space, hard to store large medical equipment” .... (Hospital informant)

2. Money or Budget Policy

Budget is the amount of money spent in a certain period to implement a program. There is no single company has an unlimited budget, so the budgeting process is important in a planning process.

“The implementation of medical equipments procurement in West Bandung District Health Office consists of three ways of procurement; First: Through e-catalogue, where the e-catalogue is the output of Government Procurement of Goods and Services Agency (LKPP) and done on-line; second: conducted by auction, if the goods are not contained in e-catalogue and the price is more than Rp. 200.000.000,-; third: through direct appointment if the goods are worth less than Rp. 200.000.000,- and not listed in the e-catalogue” .... (Health Office informant)

“Medical equipment expenditures come from National Health Insurance (JKN) and regional government budget (APBD). At Public health center, for medical equipment purchased from National Health Insurance (JKN) budget, the procurement is directly done by Public health center, while the spending of medical equipments funded from regional government budget (APBD) is done by Health Office” .... (Public health center informant).

“The source of budget for the procurement of health equipments is from Health Operating Cost (BOK), regional government budget (APBD), and National Health Insurance (JKN). The problem is that in one purchasing activity there should be no double budget, and Corporate Social Responsibility (CSR) plans with private parties for additional funds in health equipment procurement. For example, the procurement of medical equipments at Cililin Hospital and Rongga Public Health Centre (Public health center) construction last year and construction of Cipongkor Public Health Centre (Public health center) this year. And there is more funds from profit sharing fund of tobacco excise (DBHCT) or cigarette excise tax which is used for the procurement of ambulances. Cigarette excise tax is also used for health promotion.”

3. Method

Based on the interview, the method for carrying out the goods management activities is done according to government regulations, as said by the informant as follows:

“The method used for the management of goods is based on government regulations, for procurement/ purchasing uses e-catalogue, while the distribution is directly from the supplier to Public health center, later on the ones from Public health center accepted by the treasurer of goods and signed the proof of stuffs out” (Health Office informant).

Planning needs of medical equipments are submitted from each unit at Public health center, then recapitulated by the treasurer of goods to submitted to the Health Office (Public health center informant) and also there are aids from Ministry of Health, like 32 vaccine carriers came last week, in accordance with number of health centres in West Bandung District. Based on the results of the above interviews, the process of medical device management at each public health center begins by collecting and registering the needs of each unit in the public health center, then submitted to the health office, and some are from the Ministry of Health.

4. Material

Information on the process of planning of medical equipment to distribution of goods, in addition to in-depth interviews, researchers conducted a document review. From the result of document review in the appendix, it is found that from the inventory document still using manual recording, does not have operational standard yet in operationalizing medical equipments. Healthcare
facilities management at KBB Health Department is sufficient, the facilities are: computer, internet, but there is no special room for medical equipment warehouse.

5. Machine or infrastructure
Procurement activities and management of medical goods / devices cannot run maximally if not supported by supporting facilities and infrastructures. Here is the information obtained related to infrastructure:

"We have limited space for facilities and infrastructure, no place for temporary storage of medical devices. There is internet disruption with e-catalogue procurement system" (health office informant).

"Public health center does not have a medical equipment warehouse ... internet is not optimal ...” (PKM informant).

"The storage of medical devices in hospitals is limited, so that directly distributed to the unit. (Hospital informant)

6. Description of Implementation of Medical Equipment Management with E-catalogue system in West Bandung District
Implementation of health equipment management activities by Activity Technical Activity Officers (PPTK), in terms of policies and regulations on medical equipment management in the government environment of West Bandung Health Office, are as follows:

"In fulfilling the needs of medical equipment in the environment of Public health center and Hospital, West Bandung District Health Office, based on Presidential Regulation no. 4 of 2015, on the procurement of goods and services. ”

"Every medical equipment procurement, West Bandung District Health Office, issued a decree for KDP, PPHP, and PPTK, the letter of duty is signed by the Head of Service, in the implementation, letter of duty issued are two, the first is to handle about Procurement in the form of goods and the other is to handle of construction. ”

"Each member is a person who has attended training on goods and services and has been certified, but still served in the Health Office of West Bandung, because it is an assigned task.”

The decree is issued with a period of 1 year, and in contains the duties, responsibilities, authority, and about benefits provided. Regarding the mechanism of medical equipment management in West Bandung District Health Office, based on interviews in West Bandung District Health Office, namely:

"The implementation of medical equipment procurement in West Bandung District Health Office consists of three ways of procurement: First: Through e-catalog, where the e-catalog is the output of LKPP and done on-line. Second: Conducted by Auction, if the goods are not contained in e-catalogue and have value more than Rp. 200.000.000, -. Third: Through direct appointment if the item is worth less than Rp.200.000.000, - and not listed in the e-catalogue. ”

Commitment making official (PPK) has a strategic role in the procurement of goods and services, among them is to determine the HPS (own estimated price), and determine the specification of the required goods. "

"The determinant to choose which distributor will be appointed is the authority of the procurement officer, where in West Bandung District there is the ULP (Procurement Services Unit), is a unit in the form of SKPD which is headed by the Head of ULP, and its members are representatives of each SKPD Which already has a certificate of goods and services. "

There are the strengths and weaknesses on the implementation of electronic catalogue according to informants, namely:

"The implementation of e-catalogs helps improve the procurement performance online, but there are still many medical devices that are not listed in e-catalogue, especially Dental Poly, there are none in the e-catalog required by the dentist, so the goods have not been fully fulfilled. (Public health center Informant)"
The weakness of e-catalog system is that the errors often occur and the updated prices often change, while the advantages are the system is easy to operate and not too complicated. (Hospital informant)

Human Resources managing the system do not have an administrative background, but there are nurses, midwives, sanitarians, etc. (Public health center informant).

Internet network in remote areas of west Bandung District is still not good, even though the health service has made a station transmitter in some areas, but still not good. (Health Office informant)

There is lack of knowledge about medical devices to be purchased, both in terms of benefits and specifications. (Health Office informant)

Discussion

1. Human Resource

Based on the results of the above interviews, the information appears that the human resources in the management of goods is not a competent administrative officer in the field, but held by a health professional, so they do double work. It is necessary to improve the qualification of goods management by involving training and certification of goods and services management.

The recipient of a medical device at the Public health center is a treasurer of goods who is a midwife. Planning/ submission of medical equipment to the health office based on the submission of each room then summarized and submitted to the Head of Public health center to be submitted to the West Bandung Health Office. While the recipient of medical equipment at the hospital held by one person that is treasurer of goods. Goods that come are checked and tested for its feasibility function.

The determinant to choose which distributor to designate is the authority of the procurement official. The procurement officer in West Bandung District is the ULP (Procurement Services Unit), is a unit in the form of SKPD which is headed by the Head of ULP, and its members are representatives of each SKPD that already has a certificate of goods and services.

2. Money and Infrastructure

Based on the results of the above interviews it can be concluded that, in terms of funds, health equipment spending comes from APBD, and JKN. Expenditure of the same medical equipment should not get a double budget, so that the financing is adjusted. If it is already funded by APBD, then it cannot be budgeted in JKN. The budget provided by the Health Office for medical equipment expenditure is issued in accordance with the previous year's budget program.

Procurement of medical equipment can be obtained from 3 sources namely APBD, BOKK and JKN. The allocation of funds obtained is sufficient and adjusted to the priority activities. For activities that are still lack of funds, the public health center / hospital can work together with the private sector by doing CSR (Corporate Social Responsibility).

3. Method

Methods of management of goods, especially medical devices in accordance with applicable laws and regulations. In fulfilling the needs of medical equipment in the environment of Public health center and Hospital, West Bandung District Health Office based on Presidential Regulation no. 14 Year 2015, concerning the procurement of goods and services. In the management of medical devices, all government agencies are required to comply with the Minister of Home Affairs Regulation no. 19 of 2016, which regulates the guidelines on the management of regional property.

Based on the policy of the Head of Government Procurement of Goods and Serviced Agency number 14 of 2015 procurement of goods must be done by E-catalogue system in E-Purchasing. Where the E-Purchasing method is still constrained, as price updates change, the list of necessary medical devices is limited/ not in e-catalog, often error, internet network connection is sometimes weak.
4. Material
Internet network has not been maximized, whereas the system of procurement of equipment must be done with e-digital. Likewise in Public health center and hospitals, the facilities are still limited and the warehouse of medical equipment is not available. The device is an information network, network capital, asset network, and data network whose use is for the purposes and common interests of Health Office, Public health center, Hospitals and suppliers.

5. Machine/ Infrastructure
Based on the interviews there are some information obtained as follows: infrastructure facilities are needed to carry out activities of management of goods such as internet for procurement of goods with e-catalog, as well as facilities such as report forms, form submission tools, etc. Standard of Operating Procedures (SPO) is required as a guide in carrying out activities, as well as technical guidance is required to provide an overview of activities planned by the Health Office and as the basis for planning of medical equipments. The medical equipment warehouse room is indispensable for the goods storage activities before being distributed to the unit in need. Healthcare facilities management facility in West Bandung District Health Office is sufficient, there is computer, internet, but there is no special room of medical equipment warehouse. Internet network has not been maximized, whereas the system of procurement of equipment must be done with e-digital. So also in health centers and hospitals, the facilities are still limited and the warehouse of medical equipment is not available.

6. Description of Implementation of Medical Equipment Procurement Management with E-catalogue system in West Bandung District
Based on the interviews it is found that there is a need for cooperation both cross-program and cross-sector cooperation to plan and implement medical equipment procurement. The authority of the commitment making official and the implementation of the procurement and planning of medical goods/ equipment is carried out in accordance with the laws and regulations.

Tabel 1. Description of Supporting and Inhibiting Factor of E-catalogue system Implementation in West Bandung District in 2017

<table>
<thead>
<tr>
<th>Activity</th>
<th>Executive</th>
<th>System</th>
<th>Supporting Factor</th>
<th>Inhibiting Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning needs of medical equipments</td>
<td>Executive Unit (Public health center, Hospital)</td>
<td>Online form of submission of medical devices</td>
<td>Budget available</td>
<td>Limited budget</td>
</tr>
<tr>
<td>Procurement of medical equipments</td>
<td>Commitment making official (PPK), Ordering officials, procurement officials</td>
<td>E-catalogue</td>
<td>Regulations of Government Procurement of Goods and Services Agency</td>
<td>Limitations of facilities, internet signals, frequent errors, fluctuate price updates, limitations on the specifications of medical equipments</td>
</tr>
<tr>
<td>Receiver/Use r</td>
<td>Treasurer of Health Service Unit Goods</td>
<td>Checking</td>
<td>Conformity of goods specifications</td>
<td>Human Resource qualification, Difficult to checking of specification order</td>
</tr>
</tbody>
</table>
Conclusion

Implementation Procurement of medical devices with E-catalog system based on the regulations of Government Procurement of Goods and Services Agency No. 14 of 2015 in West Bandung District was just implemented around 2015. Of course there are many factors that support and obstruct the implementation. Factors that support the existence of human resources in West Bandung District Health Office that have expertise and certificates of procurement of goods and services, the appropriate budget, internet facilities and other supporting facilities, while the factors that hamper the human resources in the health service units (health centers and hospitals) are those who has not had a procurement certificate of goods and services, budgets that are not in accordance with the required product specifications, internet connection limitations, and limitations on the list of medical devices in E-catalogue. Benefits of E-catalog Systems in the provision of medical devices in health services is to accelerate the procurement process, reduce the defraud of mark-up price, the existence of standard provisions and specification of medical devices used for health services, so it is necessary to conduct human resources training in health service units in the implementation of E-Purchasing, adequate facilities, and cooperation between health offices, users (health care units such as public health center, hospitals), and suppliers in improving the implementation of the E-catalogue system in accordance with government policies and regulations. Suggestions of further research are increase the objects of the research, such as suppliers of medical equipments against the response of the implementation of E-catalogue, describe more details about the types of medical equipments that can be included in the list of E-catalogue.

References
A Preliminary Study of Bacteriocins Effects from *Lactobacillus bulgaricus* on Tumor Necrosis Factor–α (TNF-α) in Preeclampsia Trophoblast Cell

1) Prima Nanda Fauziah*, 2) Sitti Romlah*, 3) Sandra Ayu Putri Turwandi

1,2,3 Department of Medical Laboratory Technology Stikes Jenderal A. Yani

Email: primanandafauziah@gmail.com

Abstract

Bacteriocins is metabolite produce from probiotic bacteria i.e *Lactobacillus bulgaricus* ATCC 11842, which can enhance the immune system (immunomodulator). In vitro laboratory analytic study has been conducted to identify the possibility of bacteriocins as immunomodulator on decreasing TNF-α levels as molecular marker in preeclampsia pregnancy. This study used experimental method with 4 stages; preparation of bacteriocins, identification of probiotic bacteria’s growth and pH curve, normal and preeclampsia trophoblast primary cell culture, and determination of TNF-α levels. The data was analyzed by ANOVA followed by Duncan’s multiple range test (DMRT). Decreased levels of TNF-α were very significant, with p <0.001. In conclusion, bacteriocins has the ability as an immunomodulator because treatment with bacteriocins can decrease the level of TNF-α in preeclampsia trophoblast cell.

Key words: Immunomodulator, *Lactobacillus bulgaricus* ATCC 11842, preeclampsia, TNF-α.

Introduction

Preeclampsia is a major cause of morbidity and maternal and perinatal mortality. Incidence of preeclampsia is still high and management is not optimal; because of the etiology and pathophysiology of preeclampsia is still unknown (Gurnadi et al., 2015). Trophoblast invasion has been proposed as the major cause that promotes disturbance in spiral artery remodelling. Trophoblast invasion occurs due to immunology maladaptation. Poor trophoblast invasion causes endovascular trophoblast to layer decidual blood vessel, yet unable to reach miometrium that later diminish blood vessel. Bad perfusion and hypoxia trigger release of placental debris, resulting in inflammation and other pathological events (Pramatirta et al., 2015). Angiogenics and antiangiogenics are further present that leads to endothelial damage. Endothelial damage stimulates trombocyte to undergo adhesion, agegregation, and release. Both these events are terminated as indicated by decreased vasodilator, such as prostacyclin and nitrite oxide/endothelium-derived relaxing factor and increased vasoconstrictor, such as TNF-α (Pramatirta et al., 2015; Gunardi et al., 2016).

In preeclampsia, angiogenic imbalance worsen placental implantation (Gurnadi et al., 2015; Pramatirta et al., 2015; Gunardi et al., 2016). One of promising preventions in balancing angiogenics and antiangiogenics, as well as act as immunomodulator, is by admistration of bacteriocins. Previous study showed bacteriocins increases immunity in againts Enteropathogenic *Escherichia coli* (EPEC) by increasing the phagocytosis activity of macrophages cell (Herawati et al., 2014). In that study, macrophages cell were grown in medium supplemented with bacteriocins 3-12.5 µg mL⁻¹. Bacteriocins is a peptide synthesized by bacteria, including probiotic bacteria such as *Lactobacillus bulgaricus* (Kaboosi, 2011; Herawati et al., 2014). Bacteriocins bacteria is a bacteria group that possess many beneficial effects for the hosts by enhancing the growth and immunity againts diseases (Fauziah et al., 2015). Immunomodulator is a substance that recover the function of defect or hampered immune system, while immunostimulator is one of immunomodulator which improve the function of immune system (Borchers et al. 2009; Patil et al. 2011; Khazaie et al. 2012; Herawati et al., 2014).

Trophoblast cells are derived from nine months placental trophoblast in the end of trimester. In previous in vitro study, trophoblast H8 cell line derived from first trimester, were disturbed after treated with serum which equal with common maternal disturbance (Neale et al.,
2003). Serum is a blood plasma without fibrinogen composed of protein including elektrolite, antibody, antigen, hormone and exogenous substances. Antibody contained in serum is known to generate inflammation (Gunardi et al., 2016). This study aimed to observe effect of bacteriocins on level of TNF-α in vitro on trophoblast cell induced by maternal preeclampsia serum.

Method

**Bacteria Strain.** The cultures used were *Lactobacillus bulgaricus* ATCC 11842 was observed to obtain optimum age of inoculum to be suitable in assesment of proliferation and pH of cells. *L. bulgaricus* was grown in the Man Rogosa Sharpe (MRS) agar (OXOID CM0361 B) supplemented by 0.5% CaCO3 media respectively at a temperature of 37 °C for 24 h.

**Production of Bacteriocins Filtrate of *L. bulgaricus*.** Bacterial filtrate was obtained by centrifuging *L. bulgaricus* bacteria that had been active in the Man Rogosa Sharpe (MRS) broth at 6000 rpm at 4 °C for 15 min to separate the cells from the filtrate. Filtrate supernatant was taken and put into a sterile tube. It was neutralized with NaOH, and the filtrate was sterilized with 0.22 μm Millipore filter (Moghaddam et al. 2006; Fauziah et al. 2013). This filtrate was qualitatively confirmed by visual zones of inhibition on lawns of *L. lactis* (Ulrich and Hughes 2001), and was then diluted with sterile aquadest to gain bacteriocins filtrate stock equal to 1000 μg mL⁻¹ (v/v). Every stock was then diluted for the second time so we got the concentration of each microtube consecutively 25, 12.5, and 6.25 μg mL⁻¹.

**Measurement of LC₅₀ (Lethal Concentration 50%) in various concentration of bacteriocins on trophoblast cells.** Samples were diluted in aquadest to reach concentration of 10%-100%. A 600 μl aquadest was added into cuvette, and then added with 3 ml each sample. Absorbance was measured at 517 nm wavelength. Samples in serial concentration (10%-100%) in trophoblast cells were used to determine cytotoxicity toward cells. Positive control was aquadest and DPPH, and negative control was aquadest and trophoblast without bacteriocins. Absorbance was recorded at 517 nm wavelength at hour 24, and LC₅₀ of each sample was then calculated. Negative control was used as standard in LC₅₀ assesment (Gunardi et al., 2016).

**Cell culture.** Trophoblast cell was carried from maternal placenta of 34-42 weeks of pregnancy. AmnioMax was used as selective medium for placenta. Cells were passaged for 7 times using RPMI or DMEM. Primary culture of trophoblast was supplemented into new medium containing RPMI 1640 supplemented with 10% of normal or preeclampsia serum, antibiotic-antimikotic (1% Penicillin G-Streptomycin Solution Stabilised dan 1% Fungizone Amphotericin B). Cells were then incubated for 24 h at 37°C in atmosphere of 5% CO₂ (v/v) to reach confluence Viability was measured on its antibodi titer (Sayuti et al., 2012; Gunardi et al., 2016; Pramatirta et al., 2016).

**Measurement of TNF-α.** Cells of 6x10⁵ cell mL⁻¹ containing 10% of normal and preeclampsia serum, was placed into 96 well-plate, and incubated at 37°C 5% CO₂ (v/v) until confluent. Wells were washed 3-4 times with PBS 37°C to remove the medium and unattached cells. Bacteriocins in various concentration was added in accordance with growth rate and pH, incubated for 24 h at 37°C atmosphere 5% CO₂ (v/v). Each well was washed with PBS pH 7.4 for 5 min. Level of TNF-α was measured with ELISA (Gunardi et al., 2016; Pramatirta et al., 2016).

**Data Analysis** Data were analyzed with ANOVA and Kruskal Wallis test. Data analysis was performed with software SPSS 22.

**Results**

Optimum growth of *L. bulgaricus* ATCC 11842 was on 18 h with pH of 5.39 which was considered not too acid that do not cause damage on mammals cell. Mammal cells are know to have tolerance on pH ±5.0 – 8.8 (Sayuti et al., 2012). In this study, bacteriocins were divided in 11 concentrations (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% dan 100%). preeclampsia serum treated with soyghurt in various concentrations incubated for 24 h and 48 h (data are not shown). At concentration of 75%, bacteriocins showed 50% trophoblast cells. LC₅₀ value less than 75% indicate non-toxicity towards cells.
Variables tested in this study was normally distributed both in normal and preeclampsia serum treated with bacteriocins in various concentrations incubated for 24 h (data are not shown). Effects of bacteriocins in various concentration, incubation time, and serums on level of TNF-α is presented in Figure 1. As shown in Figure 1, level of TNF-α decreased as in accordance with longer incubation time and increased bacteriocins concentration. Bacteriocins decreased level of TNF-α (p<0.001). Level of TNF-α in preeclampsia-induced trophoblast cells decreased from 17.88 pg/ml to 13.67 pg/ml after treated with bacteriocins of 80% incubated for 24 h.

![Figure 1. Effects of soyghurt in various concentrations and incubation time on level of TNF-α](image)

### Discussion

Bacteriocins is a metabolite product from *Lactobacillus bulgaricus* (Fauziah et al., 2013). *L. bulgaricus* is the common probiotic used in fermentation, other than *Lactobacillus acidophilus* or *Bifidobacterium* (Isolauri et al., 2001; Pretzer et al., 2005; Fauziah et al., 2015). Bacteriocins possess ability to enhance immune system (immunomodulator) due to metabolite secreted by prebiotics, strong antioxidant, and do not contain lactose (Herawati et al., 2014). *Lactobacillus bulgaricus* can enhance nutrient content, mainly in dairy product (Tambekar and Bhutada, 2010; Fauziah et al., 2013).

From our best knowledge, there is no studies that observe potential of probiotics and antioxidant in bacteriocins on preeclampsia. In preeclampsia, there is trophoblast invasion due to immunology maladaptation that reduce uteroplacental perfusion and causes placental ischemia. Placental ischemia causes inflammation followed by elevated vasoconstrictors, such as TNF-α (Keogh et al., 2007; Pramatirta et al., 2015).

Poor trophoblast invasion causes endovascular trophoblast to layer decidual blood vessel yet unable to reach miometrium that later diminish diameter of blood vessel. Bad perfusion and hypoxia promotes release of placental debris, resulting in inflammation and other pathological events (Straszewski-Chavez et al., 2009).

In this study, bacteriocins of *Lactobacillus bulgaricus* showed immunomodulatory and antioxidant activities. Level of TNF-α in preeclampsia-induced cells decreased which was comparable to that in normal cells. Inflammatory mediators, angiogenics, antiangiogenics and placental metabolism are further present that leads to endothelial damage. Endothelial damage stimulates trombocyte to undergo adhesion, agegregation, and release. Both these events are terminated as indicated by decreased vasodilator, such as prostacyclin and nitrite oxide/endothelium-derived relaxing factor and increased vasokonstriktor, such as TNF-α (Yuan et al., 2005; Gurnadi et al., 2015; Pramatirta et al., 2016).

Probiotics are orally ingested. Bacteria are usually dead by gastric acid, HCl, yet probiotics can be digested into colon. Probiotics plays role in producing essential nutrient and
antibiotic that kills pathogens, and inhibits pathogen adhesion on colon receptor. Probiotics stimulate immunoglobulin E (IgE) release to againsts pathogens in digestive tract, and also neutralize toxin produced by pathogens that results in reduced free radicals in the body (Fauziah et al., 2015; Herawati et al., 2015).

Probiotics also plays role as antigen carrier, and bind to targeted tissue which activate macrophage to arise immune system. Probiotics increase cells producing IgA, IgM, and IgG, as well as specific sIgA both in blood serum that transport nutrient to all tissues, and colon lumen, and also modulate immune response towards inflammation and balancing vasocontractors (Herawati et al., 2015).

Conclusion
Bacteriocins has the ability as an immunomodulator because can decrease the level of TNF-α. The greatest treatment for decrease TNF-α and sEng was obtained in 70% concentration of bacteriocins and 24 h incubated time.

References


Factorial Analysis of the Risk Related to Byssinosis among Textil Workers in Cimahi

1Lela Juariah*, 2Juju Juhaeriah, 3Novie E Mauliku
1,2,3Stikes Jenderal Achmad Yani Cimahi
*Email: juariah.lela@gmail.com,
of pneumoconiosis occur after exposure to dust after working for at least 10-20 years. The severity of symptoms that arise depends on the intensity and length of exposure (Harrianto, 2009).

Smoking habits can cause lung disease or accelerate the occurrence of lung disease due to work (Harrianto, 2009). Smoking effects are known to disturb the effectiveness of some respiratory defense mechanisms.

The habit of using PPE (mask) is mostly related to the occurrence of respiratory disorders (Moeljosoedarmo, 2008).

Byssinosis is an unreported disease, it is because lung disease is still dominated by specific and non-specific infectious diseases, so detection of pneumoconiosis is often considered a common lung disease. In addition, the lack of knowledge of health workers about the disease is due to symptoms and pathophysiology diseases almost the same to lung diseases that are not related to work. Textile workers are particularly at risk for the occurrence byssinosis.

PT. Garuda Mas Semesta is the one of the textile factory in Cimahi which used cotton as base material. Workers at PT. Garuda Mas Semesta has a worker risk against the incidence of byssinosis, therefore the formulation of the problem in this study include:

1. How many is the prevalence of byssinosis that occurs in textile workers at PT. Garuda Mas Semesta Cimahi.
2. Is there a correlation of individual factors with the incidence of byssinosis in worker at PT. Garuda Mas Semesta Cimahi.
3. Whether the concentration of dust levels in the work environment can affect the incidence of byssinosis in textile workers at PT. Garuda Mas Semesta Cimahi.
4. How is the risk factors identifying incidence of byssinosis in textile workers at PT. Garuda Mas Semesta Cimahi.

Method

The research design used analytical survey with Cross Sectional approach. The research population is all textile workers part production at PT. Garuda Mas Semesta as many as 195 employees, through sampling technique convenience sampling on workers in the work area with exposure to high dust levels and areas with low dust obtained 64 employees. Data was obtained by measuring the Vital Lung Capacity (VLC) used spirometer; measurement of dust level used dustmeter; and measurement of nutritional status through measurement of Body Mass Index (BMI) using microtoice and body scales. In addition, the data were obtained through a questionnaire for risk factor for the incidence of byssinosis. Data analysis was done gradually starting univariate analysis. Bivariate analysis to know the correlation of risk factors with the incidence of byssinosis and factorial analysis to identify factors related to the incidence of byssinosis in textile workers at PT. Garuda Mas Semesta.

Results

1. Prevalence of Byssinosis in Textile Workers at PT. Garuda Mas Semesta

<table>
<thead>
<tr>
<th>Prevalence of Byssinosis</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Byssinosis</td>
<td>51</td>
<td>79.7</td>
</tr>
<tr>
<td>Not Byssinosis</td>
<td>13</td>
<td>20.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Table 1 can be concluded that of 64 employees at PT. Garuda Mas Semesta 79.7% of them experienced the incidence of byssinosis.

2. Correlation of Individual Factors with Incidence of Byssinosis in Textile Workers at PT. Garuda Mas Semesta

Individual factors in the study include: length of exposure, smoking habits, history of diseases associated with the respiratory tract, Occupational history with exposure of dust, habit of using PPE, age, working period, nutritional status. The result of bivariate analysis can be seen in the following table:
Table 2 Correlation of Individual Factors with Incidence of Byssinosis in Textile Workers at PT. Garuda Mas Semesta

<table>
<thead>
<tr>
<th>Variable</th>
<th>Byssinosis</th>
<th>Not byssinosis</th>
<th>Total</th>
<th>PR (95% CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenght of exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>43 (86%)</td>
<td>7 (14%)</td>
<td>50 (100%)</td>
<td>1,505 (0.943-2.401)</td>
<td>0.028</td>
</tr>
<tr>
<td>New</td>
<td>8 (57.1%)</td>
<td>6 (42.9%)</td>
<td>14 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking Habits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>35 (100%)</td>
<td>0 (0%)</td>
<td>35 (100%)</td>
<td>1,813 (1.306-2.516)</td>
<td>0.000</td>
</tr>
<tr>
<td>No</td>
<td>16 (55.2%)</td>
<td>13 (44.8%)</td>
<td>29 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>39 (97.5%)</td>
<td>1 (2.5%)</td>
<td>40 (100%)</td>
<td>1,950 (1.303-2.918)</td>
<td>0.000</td>
</tr>
<tr>
<td>No</td>
<td>12 (50.0%)</td>
<td>12 (50.0%)</td>
<td>24 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational History</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>37 (97.4%)</td>
<td>1 (2.6%)</td>
<td>38 (100%)</td>
<td>1,808 (1.262-2.591)</td>
<td>0.000</td>
</tr>
<tr>
<td>No</td>
<td>14 (53.8%)</td>
<td>12 (46.2%)</td>
<td>26 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habit of using PPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>41 (100%)</td>
<td>0 (0%)</td>
<td>41 (100%)</td>
<td>2,300 (1.443-1.665)</td>
<td>0.000</td>
</tr>
<tr>
<td>Yes</td>
<td>10 (43.5%)</td>
<td>13 (56.5%)</td>
<td>23 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>37 (92.5%)</td>
<td>3 (7.5%)</td>
<td>40 (100%)</td>
<td>1,586 (1.118-2.249)</td>
<td>0.003</td>
</tr>
<tr>
<td>No at Risk</td>
<td>14 (58.3%)</td>
<td>10 (41.7%)</td>
<td>24 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>41 (87.2%)</td>
<td>6 (12.8%)</td>
<td>47 (100%)</td>
<td>1,483 (0.982-2.240)</td>
<td>0.030</td>
</tr>
<tr>
<td>New</td>
<td>10 (58.8%)</td>
<td>7 (41.2%)</td>
<td>17 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutritional status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>37 (97.4%)</td>
<td>1 (2.6%)</td>
<td>38 (100%)</td>
<td>1,808 (1.262-2.591)</td>
<td>0.000</td>
</tr>
<tr>
<td>Normal</td>
<td>14 (53.8%)</td>
<td>12 (46.2%)</td>
<td>26 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>51 (79.7)</td>
<td>13 (20.3)</td>
<td>64 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 can be concluded that there are correlation of individual factors (length of exposure, smoking habits, history of diseases related to respiratory tract, occupational history with exposure of dust, habit of using PPE, age, working period, nutritional status) with incidence of byssinosis in textile workers at PT. Garuda Mas Semesta with p value ≤ 0.05.

3. Correlation of dust levels with the incidence of byssinosis in textile workers at PT. Garuda Mas Semesta

Table 3 Correlation Dust levels with Incidence of Byssinosis in Textile workers at PT. Garuda Mas Semesta

<table>
<thead>
<tr>
<th>Level Dust</th>
<th>Byssinosis</th>
<th>Not byssinosis</th>
<th>Total</th>
<th>PR (95% CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>abnormal</td>
<td>9 (100%)</td>
<td>0 (0%)</td>
<td>9 (100%)</td>
<td>1,310 (1.130-1.517)</td>
<td>0.185</td>
</tr>
<tr>
<td>Normal</td>
<td>42 (76.4%)</td>
<td>13 (23.6%)</td>
<td>55 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>51 (79.7)</td>
<td>13 (20.3)</td>
<td>64 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3 can be concluded that of 55 employees working in a place with normal dust level of 76.4% of them experience incidence of byssinosis, with p value = 0.185 (> 0.05), it means there is no correlation of dust levels with the incidence of byssinosis.

4. Factorial Analysis

The result of bivariate selection obtained p value > 0.05, then the ninth independent variables corresponding the criteria of factorial analysis, the result of factorial analysis can be seen in the following table:

Table 4 Factorial analysis Results

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. Smoking habits</td>
<td>37.179 %</td>
</tr>
<tr>
<td></td>
<td>2. History of disease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. History of job</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Habit of using PPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. BMI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Levels dust</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1. Length of exposure</td>
<td>31.739 %</td>
</tr>
<tr>
<td></td>
<td>2. Age</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Working period</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Cumulative</strong></td>
<td><strong>68.918 %</strong></td>
</tr>
</tbody>
</table>

Table 4 based on factorial analysis results identified two risk factors associated with the incidence of byssinosis. The first factors consisted of smoking habits, history of disease, occupational history, habit of using PPE, nutritional status and dust levels contributed 37.2% to the incidence of byssinosis. While the second factor consists of length exposure, age and working period contributed 31.7% to the incidence of byssinosis. Cumulatively, both factors contribute 68.9% to the incidence of byssinosis.

Discussion

The results showed that of 64 textile workers at PT. Garuda Mas Semesta who experienced the incidence of byssinosis as much as 79.7% and 20.3% did not have byssinosis. Byssinosis is a disease or lung damage that occurs due to exposure to cotton dust, hemp, or residue to workers in the workplace, which causes airway obstruction. (Ikhsan M, et al, 2009). Determination of byssinosis in this study based on measurement of vital capacity of lung (KVP) conducted on 64 employees part production, that is warping unit as many as 9 workers; unit weaving I is 30 employees and unit weaving II of 25 employees. The research results showed that 51 employees among them had VLC < 75%, it is meaning that workers had already experienced pulmonary obstruction (Permenakertrans RI No. Per.25/MEN/XII/2008). So it can cause complaints in the form of a dry cough that can still be lost initially when workers removed from dusty cotton. Other symptoms are a sense of weight or tightness in the chest (chest tightness), fever (mill fever), cough and shortness of breath on the first day back to work after resting the weekend. According with research conducted Syahputra (2015) obtained results that as many as 36 people (77%) possible byssinosis according to Schilling criteria. While (Karnagi, 2011) research, the prevalence of byssinosis was 27.3%, chronic cough 6.9%, chronic bronchitis 4.5% and acute obstruction 4.5%.

The occurrence of byssinosis is a multifactors, these factors include (Ikhsan M, 2009; Moeljosoedarmo, 2008): dust (nature of dust chemistry, dust size, the levels of dust particles), and individual factors (age, working period, smoking habits, habit of using PPE). While individual factors in this study include: age, working period, long exposure, smoking habits, habit of using PPE, history of diseases associated with the respiratory tract, occupational history with exposure to dust, and nutritional status. The result of bivariate analysis shows that there is correlation between individual factor and the incidence of byssinosis with p value <0.05.
Age will affect the frequency of respiration and lung capacity at normal term. Respiratory frequency in adults between 16-18 times per minute and has a vital capacity of lung is greater than children and infants. Certain conditions the consequences of a disease, breathing can increase faster or decrease (Syafuddin, 2006). The older age has the consequence the higher the dust that enters and is buried in the lungs as a result of inhaling daily dust (Suma'mur, 2014). Additional with a history of diseases associated with the respiratory tract will exacerbate the disruption experienced lung. For that need to be balanced with adequate nutrient intake according to age and health conditions, so that lung function can work optimally. According to Syahputra, et.al (2015) research obtained result that in the age group of 22-25 years did not encounter the incidence of byssinosis, in the age group 25-48 years 3 people experience byssinosis degree 2 in carding workers and 3 people in the age group> 48 years. However in the (Prasetyo, 2016) research obtained the result that there is no significant difference between nutritional statuses with byssinosis in workers PT. Argo Pantes Tbk Tangerang (p value > 0.05)

Prolonged contact with an environment containing dust particles will cause severe stress on the respiratory tract so that will cause respiratory function disorders. Generally, symptoms of pneumoconiosis occur after exposure to dust for at least 10-20 years. The severity of symptoms that arise depends on the intensity and duration of exposure (Harrianto, 2009). Additional with previous occupational history of exposure dust will further extend contact with dust-proof environments. The longer work period and have previous occupational history of exposure of dust in a factory, so the longer worker experienced exposure of dust. This is consistent with Mulyati. S, et.al (2015) study that the average length of work or duration of employee exposure of unit spinning is 25.4 years, unit weaving 25.04 years and administrative unit 12.7 years and analysis result show there is mean significant difference the average working period of production and non-production workers. While Wahab (2001) research shows that there is a significant difference between the working period ≥ 5 years with the working period < 5 years with prevalence ratio 2, it means that working period is positively correlated to the incidence of byssinosis and the tendency of the incidence of byssinosis 2 times more risk at working period ≥ 5 years.

Smoking habits cause lung disease or accelerate the occurrence of lung disease due to work (Harrianto, 2009). Smoking effects are known to interfere the effectiveness of some respiratory defense mechanisms. Cigarette smoke products are known to stimulate the formation of mucus and decrease cilia movements. According with Syahputra, et.al (2015) research obtained the result that workers have medium and heavy smoking habits have closeness correlation to the incidence of byssinosis. Even in Wahab (2001) study indicating that smoking habits have the most significant association to the incidence of byssinosis with RP-adjusted 3.3 means that worker who smoke have a 3.3 times greater risk incidence of byssinosis than non-smokers.

The habit of using PPE (mask) is closely correlated to the occurrence of respiratory tract disorders. If someone do not use protective equipment (masks) the frequency to entry of dust into the respiratory tract more and can lead to pneumoconiosis. This is because of the lung tissue is a medium that has the ability to capture and absorb the most efficient air pollution in the body (Moeljosodarmo, 2008). According with the Eko et al (2010) research obtained the result that workers who do not always use mask has risk to experience lung function disorders almost 15 times greater when compared with workers who always use the mask. In (Mulyati, S, et.al, 2015) research, shows that there is a correlation of using personal protective equipment with lung function disorder with p value = 0.001.

The results showed that 9 employees who were worked at the room with abnormal levels of dust, all (100%) experienced byssinosis with p value = 0.185 (p value > 0.05), it means that there is no correlation between levels of dust with incidence of byssinosis. Low levels particles of dust in air inhalation, can be cleaned are completely, but the higher the levels of dust in the environment, more people who will experience pulmonary deposition. Different case with Prasetyo (2016) research showed results that there is a significant difference between the concentration of levels dust with incidence of byssinosis at workers in PT. Argo Pantes Tbk Tangerang (p value ≤ 0.05).

Factorial analysis results showed that there were two factors formed incidence of byssinosis at textile workers of PT. Garuda Mas Semesta. The first factor consists of the habit of smoking, history of diseases related to respiratory tract, a history of previous work are exposed to dust, habitual using PPE, nutritional status and levels of dust contributing
amounting to 37.2% incidence of byssinosis. This factor is labeled name factor habit, because it includes several habitual at textile workers in PT. Garuda Mas Semesta. This habit of contributing factors of 37.2%, meaning that if the worker in PT. Garuda Mas Semesta has the habit of smoking, history of diseases related to respiratory system, a history of previous work are exposed to dust, habits of using PPE, nutritional status and levels of dust are not good, then the employee has the risk experienced incidence byssinosis amount 37.2%. Then the PT. Garuda Mas Semesta have to make prevention efforts by managing habit factors toward better or healthier, so the textile workers at PT. Garuda Mas Semesta can still work safely and comfortably.

While the second factor consists length of exposure, age and working period contributed 31.7% to the incidence of byssinosis. The second factor is labeled as a factor that can not be changed, because of the factors have been experienced by worker at PT. Garuda Mas Semesta. The irreversible factor contributes 31.7%, its meaning that the factors was experienced the textile workers at PT. Garuda Mas Semesta can be controlled by minimizing risk factors through job rotation.

Cumulatively both factors contribute 68.9% to the incidence of byssinosis, its meaning that if the workers has a risk of unfavorable habits and irreversible factors, then the employees of PT. Garuda Mas Semesta has a risk of incidence of byssinosis of 68.9%. Efforts should be made to manage worker habits and irreversible factors by PT. Garuda Mas Semesta to prevent the incidence of byssinosis.

In this study added variable history of diseases associated with the respiratory tract, previous occupational of history exposed to dust, nutritional status and long exposure. The variable is considered important for study, since in determining the occurrence of byssinosis can be established by looking at the history of respiratory-related diseases and previous work history with exposure to dust supported by examination of lung physiologic examination support with spirometer. The old variable of exposure is also an important note in this study relating to the work period and occupational disease, while the nutritional status variable with the aim to offset the age factor and history of diseases associated with the respiratory system.

Conclusion

Based on the results of the research, obtained that the prevalence of byssinosis in textile workers at PT. Garuda Mas Semesta were 79.7%. There is a relation of the individual factors (length of exposure, smoking habit, history of disease, occupational history, habits using of PPE, age, working period, nutritional status) with incidence of byssinosis. But there were no correlation of levels of dust with incidence of byssinosis. Identified two factors related to the incidence of byssinosis, the first factor consisted of nutritional status, the levels of dust, smoking habit, history of disease, occupational history and habit of using PPE which contributed amounted to 37.2 %. As for the second factor consisted of age, working period and the length of exposure contributed 31.7% of incidence of byssinosis.

Acknowledgement

This research is made possible by support from grant administered by DIKTI, Ministry of Education and Culture of Indonesia; K3 of Laboratory, Stikes Jenderal A. Yani Cimahi and PT. Garuda Mas Semesta for support of the research.

References


The Counseling of Marital Age Maturity Effect Toward Girls’ Attitude on Early Marriage

1Sophia*, 2Sri Yuniarti, 3Eka Putri
1,2,3Department of Midwifery, School of Health Sciences Jenderal Achmad
*Email: sophia.maryana@yahoo.com

Abstract
Based on data from the office of religious affair in Bandung Barat Jayagiri Lembang Village in 2015, it is revealed that there are 8.5% teenage girls who married at the age 16-19 years. The impacts of early marriage are the high rate of maternal mortality, infant mortality and divorce case. Information of marital age maturity is very important for teenagers to avoid early marriage, one of them is health education. This study purposes to know the effect of marital age maturity especially on the health education on teenage girls’ attitude about early marriage. This study used quasi experimental with one group pretest posttest. Fifteen teenage girls at PGRI 1 Lembang Senior High School were drawn out as respondents on 1 February 2016. Interviews were using a media of questionnaire to collect data and then analyzed by using t test. The result of this research showed that there is significant impact of the counseling of marital age maturity toward young woman attitude on early marriage (p=<0.05). Thus, the teenage girl was expected to be active in rising activity; which discuss more about health reproduction, as a foundation in forming a happy and prosperous family in the future.

Key words: Attitude, early marriage, marital age maturity

Introduction
Teen life is the life that determines the future. Based on the 2010 population census, the number of adolescents aged 10-24 years is about 64 million or 27.6% of the total population of Indonesia. A very large number of the above, adolescence as the next generation of the nation needs to be prepared to be a healthy man physically, spiritually, mentally and spiritually. In fact, various studies show that adolescents have very complex problems along with the transition period experienced by adolescents, one of them early marriage (BKKBN, 2012).

Indonesia is a country with a high percentage of early marriages, ranking 37 in the world and the second highest in ASEAN. Adolescent girls aged 10-14 years in Indonesia have been married as much as 0.2% and ages 15-19 as many as 11.7%. West Java is the second highest province with an early marriage rate of 36.4% in 2012, 36.9% in 2013 and 37.2% in 2014 (West Java DHO, 2014). Factors causing early marriage in adolescents are low education, economic needs, young married culture, regulated marriage and free sex (BKKBN, 2012). Other causes are environmental factors, association, and mass media (Sibagariang, 2010).

Early marriage in adolescent girls has several risks, such as domestic violence and in pregnancy at risk of miscarriage, preeclampsia, infection, anemia, cervical cancer, and infant death. Risks that occur in labor such as premature, difficulty in labor, and LBW that ends with the death of the mother and baby. The above condition is supported by the data of SDKI (2012) that the mortality rate of mothers aged 15-19 years as much as 9.9% and those aged 20-24 years as much as 23.2%. In addition to physical factors, the risks facing adolescent girls at early marriage are psychological factors in which adolescents are immature, unstable, emotional, socially incapable, and adaptable (Kumalasari, 2012).

Based on these risks, an approach is needed to achieve new sustainable development goals (SDG’s), which is to eliminate early marriage by 2030 (UNICEF, 2016). Responding to the teenagers’ problems, the National Population and Family Planning Agency (BKKBN) proclaimed the Planned Generation (Genre) program, a program developed in the context of preparing family life for adolescents so that they are able to carry out a planned education, with full planning according to the cycle of reproductive health, is expected to overcome the problem of quantity and quality of population, especially adolescents (BKKBN, 2012).

The substance in the planned generation program in the form of BKKBN in 2010 is the moral cultivation of 8 family functions, the marital age maturity, the triad of reproductive health of
adolescents (Sexuality, HIV/AIDS, Drugs), life skills and resilience of families with gender insight. Marital Age Maturity is part of the Planned Generation (Genre) program. Marital Age Maturity is an attempt to increase the age at first marriage, the minimum age is 20 years for women and 25 years for men. Marital Age Maturity is not just postponing marriage until a certain age only but make sure that the first pregnancy occurs at a fairly old age. Even cultivated if a person fails to mature the age of marriage, then delay the birth of the first child should be done (BKKBN, 2016).

Strategy in realizing Marital Age Maturity program one of them through counseling. The purpose of counseling is to provide knowledge and attitude formation. Good knowledge will shape good attitude (Syarifudin, 2013).

West Bandung regency is one district in West Java with a percentage of early marriage rate of 12.9% (West Java Health Office, 2014). Data Ministry of Religion West Bandung 2015 shown that the highest incidence rate of early marriage is in District Lembang, Jayagiri occupy the highest number of marriage occurrences from 16 urban villages of 8.3%. PGRI 1 Lembang Senior High School is located in Jl. Barulaksana No.65, Jaya Giri, District Lembang, West Bandung District Accredited with A score.

The results of preliminary study on 10 students of PGRI 1 Lembang Senior High School by November 11, 2016, it was revealed that all respondents claimed to have never get counseling about the planned generation and do not know the limits of the age of early marriage. 6 girls stated agreeing to an early marriage as for avoiding adultery reason. The interview with teachers of PGRI 1 Lembang Senior High School described that in the year of 2016, there were 2 girls got married at the age of 17.

Based on the above background, the authors felt interested to examine “The Counseling of Marital Age Maturity Effect Toward Girls’ Attitude on Early Marriage in PGRI 1 Lembang Senior High School.”

Method

This type of research is a pre-experimental design. The design of the research used was a one-pretest posttest comparison design. The number of samples of 15 female students from grade 1, 2 and 3 aged 15-19 years. The sampling technique is done by cluster sampling. Questionnaires are designed with Likert scale. Univariate and bivariate data analysis using t-dependent test.

Results

Table 1. Frequency of Girls’ Attitude Distribution Before Being Given Counseling of Marital Age Maturity at PGRI 1 Lembang Senior High School Year 2017

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>Negative</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on table 1, it can be seen that from 15 respondents, more than half of adolescents have negative attitudes about early marriage as much as 9 respondents (60%).

Table 2. Frequency of Girls’ Attitude Distribution After Being Given Counseling of Marital Age Maturity at PGRI 1 Lembang Senior High School Year 2017

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>12</td>
<td>80</td>
</tr>
<tr>
<td>Negative</td>
<td>3</td>
<td>20</td>
</tr>
</tbody>
</table>
Based on table 2, it can be seen that out of 15 respondents, most teens have a positive attitude about early marriage taken out from the answer of 12 respondents (80%).

<table>
<thead>
<tr>
<th>Table 3.</th>
<th>Girls’ Attitude Before and After Being Given Counseling of Marital Age Maturity at PGRI 1 Lembang Senior High School Year 2017.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Before</td>
<td>15</td>
</tr>
<tr>
<td>After</td>
<td>15</td>
</tr>
</tbody>
</table>

Based on table 3 it can be seen that the average girls' attitude before being given counseling is 37.20 with standard deviation of 4.974. While after being given counseling 70.3% with standard deviation of 5.934. The statistical test results obtained p value = 0.00 with alpha 5% (0.00 <0.05). Thus, there is influence of giving counseling on the attitude of girls toward early marriage.

Discussion

Research shows that 60% of respondents have a negative attitude which means young women support early marriage. Preliminary study results, there are several factors of young women to support early marriage is not yet know the risk of early marriage, stay away from adultery, and in the environment where there is still an early marriage. The absence of socialization about the risk of early marriage of health workers to form adolescent attitudes towards supporting early marriage, the lack of knowledge about early marriage will form the wrong attitude. Health workers are among the social components that influence attitude. Someone who is considered important, someone who we expect his approval for every move our actions and opinions will greatly influence the formation of our attitude towards something (Azwar, 2015). The culture in which we live and grow has a major influence on the formation of our attitudes. From the results of interview researchers, those who agree with the early marriage of them because the area where they live there are still doing early marriage and it is a natural thing. Without us knowing the culture influences our attitude toward various problems. it is the culture that gives the experience of individuals who are members of the community's care group (Azwar, 2015). Factors affecting attitudes are personal experience factors, culture, influences of others that are considered important, social media, educational institutions and religious institutions, and emotional factors (Azwar, 2015).

The study of Montazeri, et al (2016) suggested that less health promotion increases their vulnerability to poor health and increases social problems, one of them is early marriage. This research supported by Husna's research (2014) about the influence of counseling on attitudes obtained before the counseling, 91.2% of respondents have a negative attitude. Sapitriya research (2014) on the influence of Early Marriage Counseling Against Youth Attitude shown the attitude of giving counseling, 11% have less attitude. This shows that the attitude of respondents about early marriage before being given counseling is still low or negative attitude.


The results showed the attitude of young women about early marriage after being given counseling Marital Age Maturity (MAM), 80% of respondents to be positive which means do not support early marriage. At the time of the counseling of more than 50% of young women questioned about early marriage and MAM so as to form good knowledge. Good knowledge will shape teenage attitudes towards more positive and shape good behavior (Syarifudin, 2014).
Health education on MAM greatly affect teenage attitudes about early marriage. This is in line with Syarifudin (2014) that health education is a learning process to develop the correct understanding and positive attitude of individuals or groups on health.

3. The Counseling of Marital Age Maturity Effect Toward Girls' Attitude on Early Marriage in PGRI 1 Lembang Senior High School.

The result of the research shows that there is influence of Marital Age Maturity counseling to the girls' attitude on early marriage in PGRI 1 Lembang Senior High School in 2017. The result of this research in accordance with the purpose of the research to prove that the respondents after being given counseling has a better attitude; by not supporting early marriage. There are significant differences in attitudes between before and after counseling. According to Lubis (2013) psychologically adolescent eager, have a high willingness to know something new to be one reason teens can think rationally about the risks if they do early marriage.

Good knowledge of the risks of early marriage and maturity of marriage age directly shape attitudes and behavior toward positive. As described in the Theory of health belief model proposed by Rosenstock in Alhamda (2015) states that health behavior is determined by personal belief or perception. The five facets of thinking within the individual that affect the effort within the individual to determine what is good for itself is perceived susceptibility, perceived severity, perceived benefit of action, perceived barrier to action (a perceived obstacle or action taken), cues to action.

The correct perception or understanding of physical, mental, economic, social, education in marital age maturity ultimately giving signals to take the right action (positive) that is to avoid the attitude of willingness to do early marriage.

The results of research reinforced by Yuliasari (2014) explained there is influence of reproductive health education on adolescent attitude about early marriage (p = 0,000). The results of this study are also in line with the results of Husna's research (2014) obtained that the provision of health counseling gives an increase to the attitude of young women (p = 0,00) (<0,05) this indicates a change of adolescent attitude about early marriage towards more positive or does not support early marriage.

Attitude is a mental state of readiness or willingness to act. Attitude is a readiness to react to objects that are organized through experiences that provide dynamic and directional influence on individual responses. Health education in the end is not only to achieve at the level of good knowledge in adolescents but more important is to achieve attitude (attitude) and better behavior or readiness to act on information obtained to be done or done in everyday activities (Widyatun, 2009).

This is also in line with Notooadmojo Theory (2010) that the 4 (four) levels of attitude, starts by receiving, responding, appreciating and responsible. Proven that attitude or behavior based on knowledge will be better than not realized by the knowledge, in a person that there is already a sequential process to adopt the attitude and behavior is to start from awareness, feel attracted to stimulus and object (interest), assessment (evaluation) and adoption where respondents will behave and behave well in accordance with the knowledge it has.

It is also in accordance with the purpose of counseling, in which improving the ability of the community to help themselves in the health sector by implementing a healthy way of life and play an active role in health efforts (Syarifudin, 2014).

Based on the description above, it can be concluded that the extension efforts proved significantly can change the attitude, so counseling is one of effective promotive or preventive efforts to prevent and cope with health problems, especially about early marriage.

Conclusion

1. Girls' attitude before the counseling shown that more than half of the negative attitude about early marriage, seen from the answer of 9 respondents (60%).
2. Girls' attitude after the counseling, almost entirely positive about early marriage, seen from 12 respondents (80%).
3. There is influence of Marital Age Maturity Counseling toward girls' attitude on early marriage (p = 0,00 <0,05).
References


BKKBN. 2012. hasil pernikahan usia dini BKKBN PPT_RS [Read-Only] - hasil_pernikahan_usia_dini_BKKBN_PPT_RS_[Read-Only].pdf. (Diakses pada tanggal 1 Oktober 2016)


BKKBN. 2016. Pendewasana Usia Perkawinan http://lampung.bkkbn.go.id/Lists/Artikel/DispForm.aspx?ID=21&ContentTypeId=0x01003DCABABC04B7084595DA364423DE7897. (Diakses pada Tanggal 1 Oktober 2016)


Alfabeta
Knowledge, Attitude, and Practices Students on Sexual and Reproductive Health in Selected Government Senior High Schools in Cimahi

Yayat Suryati
Stikes Jenderal Achmad Yani Cimahi
Email: yayat_suryati@yahoo.co.id

Abstract
Adolescents’ reproductive health in Indonesia is of growing concern. Over the past decade, unintended pregnancy resulted from pre-marital sexual intercourse and unsafe sex behaviors tend to be increasing. Lack of reproductive health knowledge was a major cause of such risky behavior. The need for sexuality education for youth has been articulated, and numerous activities in Indonesia, especially West Java, have been directed at young people. The overall problem arises from the lack of information that is supported by the characteristics of the adolescents who are in the process of growth and development. This research is a descriptive quantitative research design, descriptive research was used to describe the level of knowledge, skills and attitudes of adolescent sex behavior in Senior High School. Self-assessed knowledge of the adolescent on sexual and reproductive health in High schools were assessed as Either Agree or Disagree, with numerical mean ratings of 2.99, that attitude as Either Agree or Disagree (EAD), with mean ratings of 2.91, and the practices as agree or Disagree, with an overall mean score of 3.07. The adolescent strongly agreed on their self-assessed knowledge on sexual and reproductive health with the characteristics sex of adolescent boys is wet dreams, and Menarche among girls and growth around the genitals, and disagree on attitude with statement: I think sex before marriage is acceptable to the origin of the agreement; and to the practices was either good or bad; but agreed on statement “I abstain from sexual activity to prevent pregnancies”.

Introduction
Indonesia is one of the developing countries in the region which is a developing country, currently has a population of approximately 237.6 million people, where 63.4 million or 26.7% of the population of Indonesia are adolescents (Indonesian Demographic Health Survey (IDHS), 2010). One-fifth of the world population are adolescents, and 83% of whom live in developing countries, including Indonesia (World Health Organization (WHO), 2012). Adolescents’ reproductive health in Indonesia is of growing concern. Over the past decade, unintended pregnancy resulted from pre-marital sexual intercourse and unsafe sex behaviors tend to be increasing. Lack of reproductive health knowledge was a major cause of such risky behavior. (Widyastari, D. A., 2014). The need for sexuality education for youth has been articulated, and numerous activities in Indonesia, especially West Java, have been directed at young people. The overall problem arise from the lack of information that is supported by the characteristics of the adolescents who are in the process of growth and development.

Cimahi City is one area that is located in West Java, which is one of the major cities in Indonesia, and is an extension of the city of Bandung. The population of the Cimahi City in 2014 amounted to 579,015 people and the number of teenage was approximately 152,002 people (the central agency of statistics, 2016) where high incidence to premarital adolescent behavior were observed. Important changes, together with urbanization and the explosion of information across frontiers, have increased the exposure of Indonesian young people to the risks related to reproductive health.

In the light of the foregoing, being a nurse who is in the field of academe, hence arouse her interest to study on the topic.
Methods

This research is a descriptive quantitative research design, which refers to a format, objective, systematic process for obtaining quantifiable information about adolescent behavior related to reproductive health among students of Senior High School in Java. Descriptive survey research was used for characteristics, opinions, attitudes or behaviors as they currently exist in a target population (Keele, 2010 cited in Valdez, M., A., 2013). Descriptive research was used to describe profile of participant and describe the level of knowledge, skills and attitudes of adolescent sex behavior in Senior High School in Java, Indonesia. explained that descriptive research describes and interprets “what is”.

Population, Sample and Sampling Techniques

The sample in this research consist of 306 student respondents from the government Senior High School in South Cimahi, West Java, Indonesia. Random sampling technique was applied in this research. According to Birion, et. al., it is sampling method in which all members of a group (population or universe) have an equal and independent chance of being selected. The results of this study, however, cannot be generalized.

The questionnaire was adapted from Daliana, N. (2013) and Hurlock, B. E., (2011) and modified by the researcher as the main instrument in the gathering of necessary data for the study. For the validation of the questionnaire’s content, expert judgment was undertaken. It refers to the degree to which the instruments logically appear to measure the intended variable (Best, & Kahn, 2006).

Statistical Treatment Of Data

In answering specific questions, appropriate statistical tools were utilized, as follows:

The percentage distribution was used to determine percentage groups of respondents where the formula is $% = \frac{f}{n} \times 100 \% = \frac{f}{n} \times 100$; where $f$ is the frequency; $n$ is the sample size and one hundred (100) is the multiplier.

The weighted mean was computed using the following formula

$$\bar{X} = \frac{\sum_{i=1}^{n} W_i X_i}{n}$$

where:

$W_i$ = weight of each item or value

$X_i$ = represents each of the items or values

$n$ = total number of weights

The computed weighted means were interpreted using the following scales:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Range</th>
<th>Verbal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4.21 – 5.00</td>
<td>Strongly Agree (SA)/Very Good (VG)</td>
</tr>
<tr>
<td>4</td>
<td>3.41 – 4.20</td>
<td>Agree (A)/Good</td>
</tr>
<tr>
<td>3</td>
<td>2.61 – 3.40</td>
<td>Either Agree or Disagree (EAD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/Either Good or Bad</td>
</tr>
</tbody>
</table>
Statement of the Problem

This study determined the self-assessed knowledge, attitude and practices of adolescents on sexual and reproductive health of the government Senior High Schools at Cimahi City-West Java, Indonesia.

Specifically, it sought answers to the following questions:

1. What is the demographic profile of the adolescent student-respondents in the selected government school in terms of:
   1.1 gender;
   1.2 religion;
   1.3 grade level; and
   1.4 tribe?

2. What is the self-assessed knowledge of the adolescent student respondents on sexual and reproductive health in government?

3. What is the self-assessed attitude of the adolescent student respondents on sexual and reproductive health in government?

4. What is the self-assessed practices of the adolescent student respondents on sexual and reproductive health in government?

Results

This chapter presents analyses and interprets the data for each of research problems raised in chapter 1.

1. What is the demographic profile of the adolescent student-respondents in the selected government school in terms of:
   1.1 gender;
   1.2 religion;
   1.3 grade level; and
   1.4 tribe?

Table 2 presents the summary of frequency and percentage distribution of the adolescent student-respondents in the selected government schools in terms of gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>192</td>
<td>63%</td>
</tr>
<tr>
<td>Male</td>
<td>114</td>
<td>37%</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table above shows that majority of the adolescent student-respondents are female which is 192 or 63% of the total respondents.

Table 3 presents the summary of frequency and percentage distribution of the adolescent student-respondents in the selected government in terms of religion.
Table 3
Summary of Frequency and Percentage Distribution of the Adolescent Student-Respondents in the Selected Government Schools in terms of Religion

<table>
<thead>
<tr>
<th>Religion</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islam</td>
<td>291</td>
<td>95%</td>
</tr>
<tr>
<td>Kristen</td>
<td>10</td>
<td>3%</td>
</tr>
<tr>
<td>Hindu</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Budha</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>100%</td>
</tr>
</tbody>
</table>

Results show that majority of the adolescent student-respondents belong to Islam religion; 291 or 95%; 10 or 3%. There were only 2 or 1% hindu and budha.

Table 4 presents the summary of frequency and percentage distribution of the adolescent student-respondents in the selected government schools in terms of grade level.

Table 4
Summary of Frequency and Percentage Distribution of the Adolescent Student-Respondents in the Selected Government Schools in terms of Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>97</td>
<td>32%</td>
</tr>
<tr>
<td>Level 2</td>
<td>115</td>
<td>38%</td>
</tr>
<tr>
<td>Level 3</td>
<td>94</td>
<td>31%</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>100%</td>
</tr>
</tbody>
</table>

The above table shows that majority of the adolescent student-respondents are from government school: Level 1 is 97 or 32%; Level 2, 115 or 38%; and Level 3, 94 or 31%.

Table 5 presents the summary of frequency and percentage distribution of the adolescent student-respondents in the selected government schools in terms of tribe.

Table 5
Summary of Frequency and Percentage Distribution of the Adolescent Student-Respondents in the Selected Government Schools in terms of Tribe

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sundanese</td>
<td>219</td>
<td>72%</td>
</tr>
<tr>
<td>Javanese</td>
<td>52</td>
<td>17%</td>
</tr>
<tr>
<td>Batak</td>
<td>14</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>100%</td>
</tr>
</tbody>
</table>

The above table shows that majority of the adolescent student-respondents belong to Sunda tribe 219 or 72%; Jawa, 52 or 17%. Batak, 14 or 5%, and other, 21 or 7%.

2. What is the self-assessed knowledge of the adolescent student respondents on sexual and reproductive health in government schools?
### Table 6
Summary of Mean Values and Verbal Interpretation of the Self-Assessed Knowledge of the Adolescent Student-Respondents on Sexual and Reproductive Health in Government Schools

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>Mean</th>
<th>Verbal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The characteristics sex of adolescent boys is wet dreams, and Menarche (menstruation) among girls and growth around the genitals, armpits, chest, arms, and legs</td>
<td>4.49</td>
<td>Strongly Agree/ Very Good</td>
</tr>
<tr>
<td>2. Physical development of sexual organs of men and women, cause changes in the sexual behavior of adolescent..</td>
<td>3.76</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>3. The development of the sex organs have strong influence in the interest of teenagers towards the opposite sex./</td>
<td>3.88</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>4. Adolescent girls tend to have sexual behavior that is aggressive, open, persistent, outspoken, and more difficult to resist than teenage boys</td>
<td>2.75</td>
<td>Either Agree or Disagree/ Either good or bad</td>
</tr>
<tr>
<td>5. Sexual behavior is all behavior driven by sexual desire either self-inflicted, with the opposite sex or the same sex</td>
<td>3.28</td>
<td>Either Agree or Disagree/ Either good or bad</td>
</tr>
<tr>
<td>6. Hugging and kissing a boyfriend, do not violate the norms and religion./</td>
<td>1.42</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>7. Asexual relationship with someone much loved, may be done, provided with his own boyfriend.</td>
<td>1.41</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>8. Masturbation is prohibited by religion because it will damage your reproductive development./</td>
<td>3.86</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>9. Sexual intercourse with someone who is very loved, may be</td>
<td>1.41</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
</tbody>
</table>
performed, although the female reproductive organ is damage/

10 Sexual intercourse just once will not cause pregnancy, and will not be contracting sexually transmitted diseases./ 2.01 Disagree/Bad

Overall Mean 2.83 Either Agree or Disagree/ Either good or bad

The above table shows that self-assessed knowledge of the adolescent student-respondents on sexual and reproductive health in government schools were assessed as Either Agree or Disagree, with numerical mean rating of 2.83 respectively.

Indicator statement: The characteristics sex of adolescent boys is wet dreams, and Menarche (menstruation) among girls and growth around the genitals, armpits, chest, arms, and legs obtained the highest mean score of 4.28, verbal interpretation, Strongly Agree/ Very Good.

Variable statement, Sexual intercourse with someone who is very loved, may be performed, although the female reproductive organ is damage, obtained the lowest mean score of 1.41, Disagree/Bad and indicator, Asexual relationship with someone much loved, may be done, provided with his own boyfriend, was assessed as Strongly Disagree/ Very Bad, mean of 1.41.

3. What is the self-assessed attitude of the adolescent student-respondents on sexual and reproductive health in government schools?

Table 7 presents the summary of mean values and verbal interpretation of the self-assessed attitude of the adolescent student-respondents on sexual and reproductive health in government schools.

<table>
<thead>
<tr>
<th>ATTITUDE</th>
<th>Mean</th>
<th>Verbal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 I like sex education given at school.</td>
<td>3.13</td>
<td>Either Agree or Disagree/ Either good or bad</td>
</tr>
<tr>
<td>2 I find it very easy to talk about sex with teacher.</td>
<td>1.96</td>
<td>Disagree/Bad</td>
</tr>
<tr>
<td>3 I was curious to try after learning about sex education.</td>
<td>1.64</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>4 I think the health care workers who come to school give better education</td>
<td>4.28</td>
<td>Strongly Agree/ Very Good</td>
</tr>
<tr>
<td>5 I think sex before marriage is acceptable to the origin of the agreement.</td>
<td>1.39</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>6 I am afraid of being abandoned when I say no to my partner.</td>
<td>1.70</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>7 Most of my sexual knowledge came from</td>
<td>2.41</td>
<td>Disagree/Bad</td>
</tr>
</tbody>
</table>
Results show that self-assessed attitude of the adolescent student-respondents on sexual and reproductive health in government schools was assessed as Either Agree or Disagree (EAD), mean of 2.91 respectively.

Indicator statement: *I feel reproductive health is very important for my future*, obtained the highest mean rating of 4.28, verbal interpretation of Strongly Agree/ Very Good 4.73. Assessment of the indicator, *I think sex before marriage is acceptable to the origin of the agreement* got the lowest mean rating of 1.39, verbal interpretation of Strongly Disagree/ Very Bad.

4. What is the self-assessed practices of the adolescent student respondents on sexual and reproductive health in government schools?

Table 8 presents the summary of mean values and verbal interpretation of the self-assessed practices of the adolescent student-respondents on sexual and reproductive health in government schools.

<table>
<thead>
<tr>
<th>PRACTICES</th>
<th>Mean</th>
<th>Verbal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.12</td>
<td>Disagree/Bad</td>
</tr>
<tr>
<td>2</td>
<td>1.81</td>
<td>Disagree/Bad</td>
</tr>
<tr>
<td>3</td>
<td>3.80</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>4</td>
<td>3.85</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>5</td>
<td>3.65</td>
<td>Agree/Good</td>
</tr>
<tr>
<td>6</td>
<td>1.28</td>
<td>Strongly Disagree/ Very Bad</td>
</tr>
<tr>
<td>7</td>
<td>3.05</td>
<td>Either Agree or Disagree/ Either good or bad</td>
</tr>
<tr>
<td>8</td>
<td>3.78</td>
<td>Agree/Good</td>
</tr>
</tbody>
</table>
Above data revealed that adolescent student-respondents school with the self-assessed practices of adolescent student-respondents from government school, which showed they also Either Agree or Disagree, overall mean score of 3.07.

Of the indicators given above, *I abstain from sexual activity to prevent pregnancy* obtained the highest mean score of 4.21, verbal interpretation of Agree/Good.

**Discussion**

1. What is the demographic profile of the adolescent student-respondents in the selected government school?

   Majority of the adolescent student-respondents are female which is 192 or 63%; Level 2, 115 or 38%; Islam religion; 59 or 97%; and Sunda tribe 219 or 72%.

2. What is the self-assessed knowledge of the adolescent student respondents on sexual and reproductive health in government schools?

   The above table shows that self-assessed knowledge of the adolescent student-respondents on sexual and reproductive health in government schools were assessed as Either Agree or Disagree, with numerical mean rating of 2.83 respectively.

   Indicator statement: *(The characteristics sex of adolescent boys is wet dreams, and Menarche (menstruation) among girls and growth around the genitals, armpits, chest, arms, and legs) obtained the highest mean score of 4.28, verbal interpretation, Strongly Agree/Very Good.*

   Variable statement, *(Sexual intercourse with someone who is very loved, may be performed, although the female reproductive organ is damaged, obtained the lowest mean score of 1.41, Disagree/Bad and indicator, Asexual relationship with someone much loved, may be done, provided with his own boyfriend, was assessed as Strongly Disagree/Very Bad, mean of 1.41.*

   The above results concur with the study of Solikhah (2016), wherein she found out that Lack of knowledge about reproductive health in adolescent, making teens easily influenced by misinformation and harmful to their reproductive health. Health education plays an important role in increasing their knowledge and behavior of young people in order to maintain good reproductive health. The purpose of the research was to see the impact of health education on the knowledge and behavior of adolescents in reproductive health. Paired t test analysis results indicate that counseling on reproductive health effect on both knowledge about reproductive health (mean difference: 10.216, 95% CI: 6.622 to 13.809) and attitude about reproductive health in adolescents (mean difference: 65.417, 95% CI: 11,176 to 61.690). Knowledge of adolescents about reproductive health would be beneficial in preparing the young people in good reproductive health issues so expect teenagers do not conflict with the norms prevailing in the community.

   The findings can be inferred also from the article of Oswalt, A. (2010) wherein she states: Most boys have stroked or rubbed their penises for pleasure long before they're able to achieve orgasm—in some instances, as far back as infancy. A child may consciously masturbate himself to his first ejaculation. Or this pivotal event of sexual maturation may occur at night while he's asleep. He wakes up with damp pajamas and sheets, wondering if he'd wet the bed.

   A nocturnal emission, or "wet dream," is not necessarily the culmination of a sexually oriented dream.

   The teenage years are also called adolescence. Adolescence is a time for growth spurts and puberty changes. An adolescent may grow several inches in several months followed by a period
of very slow growth, then have another growth spurt. Changes with puberty (sexual maturation) may occur gradually or several signs may become visible at the same time. There is a great amount of variation in the rate of changes that may occur. Some teenagers may experience these signs of maturity sooner or later than others. http://www.stanfordchildrens.org/en/

3. What is the self-assessed attitude of the adolescent student-respondents on sexual and reproductive health in government schools?

Results show that self-assessed attitude of the adolescent student-respondents on sexual and reproductive health in government schools was assessed as Either Agree or Disagree (EAD), mean of 2.74 respectively.

Indicator statement: *I feel reproductive health is very important for my future*, obtained the highest mean rating of 4.28, verbal interpretation of Strongly Agree/Very Good 4.73.

Assessment of the indicator, *I think sex before marriage is acceptable to the origin of the agreement* got the lowest mean rating of 1.39, verbal interpretation of Strongly Disagree/Very Bad.

The finding concurs with the study of Utomo, (2003), which states: Realistically, there are many years to come before Indonesia can develop and implement reproductive health education and services for young people who are still single. Strong political will is needed to deliver reproductive health education in schools and to develop friendly integrated reproductive health services for single young people. Ideally, this approach should be developed hand in hand with the willingness of parents to openly discuss sexuality related issues with their children. The government needs to develop policy and programs to develop parents’ capacity in communicating with their children and educating them on sexuality issues. It is important to open psychological and communication barriers between parents and children in discussing the risks and life threatening nature of not practicing safe sex and to stress the importance of consulting with parents if they are confronted with problems related to sexuality.

Further, the study negates the findings of Situmorang, (2001), to wit: Today young people are increasingly tolerant of premarital sex. Although for most of them a woman’s virginity is still a great concern, it is no longer seen as a very important matter in choosing a future wife. The demise of the parent-arranged marriage, and the opportunity for a young man to know his future wife before committing to marriage, mean that a potential wife’s personality is more important than her virginity (Utomo, 1997; Situmorang, 2001).

A study among unmarried men aged 17-24 years in Yogyakarta and Bali reported that 48 per cent out of 181 respondents in urban Bali and 50 percent of 185 respondents in urban Yogyakarta disagreed that a woman has to preserve her virginity until married (Singarimbun, 1996:118). A study among unmarried young people aged 15-24 years in Medan revealed that only 32 per cent of 875 respondents said that virginity is the most important factor in choosing a future spouse (Situmorang, 2001:95).

4. What is the self-assessed practices of the adolescent student respondents on sexual and reproductive health in government schools?

Above data revealed that adolescent student-respondents school with the self-assessed practices of adolescent student-respondents from government school, which showed they also Either Agree or Disagree, overall mean score of 3.07.

Of the indicators given above, *I abstain from sexual activity to prevent pregnancy* obtained the highest mean score of 4.21, verbal interpretation of Agree/Good.

Results negate the findings in the study of Situmorang, (2001) wherein the findings state: Indonesian young people are experiencing extremely rapid and bewildering change in values, attitudes and behavior regarding sexuality. They are becoming more liberal in expressing their sexual feelings, especially those in urban areas. Traditional expectations that young people remain virgins until marriage are incompatible with city life. Access to a variety of entertainment facilities, including night-clubs, discotheques and pornographic materials through movies, videos, magazines, books and the internet, may encourage young people to experiment more with their
natural curiosity. Many of them engage in risky sexual behavior: they practice unprotected sex with multiple partners or seek out partners who are likely to carry high risks, such as prostitutes. These place them at high risk of unwanted pregnancy, abortion and STDs, including HIV.

Conclusion
1. Majority of the adolescent student-respondents are female which is 192 or 63%; Level 2, 115 or 38%; Islam religion; 59 or 97%; and Sunda tribe 219 or 72%.

2. That the self-assessed knowledge of the adolescent student-respondents on sexual and reproductive health in government schools were assessed as Either Agree or Disagree, with numerical mean rating of 2.83 respectively. That adolescent student-respondents strongly agree on their self-assessed knowledge on the indicator statement: The characteristics sex of adolescent boys is wet dreams, and Menarche (menstruation) among girls and growth around the genitals, armpits, chest, arms, and legs, and strongly disagree on the statement, Asexual relationship with someone much loved, may be done, provided with his own boyfriend.

3. That adolescent student-respondents either agree or disagree on their self-assessed attitude on sexual and reproductive health; and strongly agree on the indicator statement: I feel reproductive health is very important for my future; whereas they strongly disagree on the statement, I think sex before marriage is acceptable to the origin of the agreement

4. That adolescent student-respondents either agree or disagree on their self-assessed practices on sexual and reproductive health; and agreed on the indicator, I abstain from sexual activity to prevent pregnancy; whereas student-respondents strongly disagree on the indicator, I practice premarital sex.

References
Bloom, Benjamin S. Taxonomy of Educational Objectives (1956).Published by Allyn and Bacon, Boston, MA. Copyright (c) 1984 by Pearson Education., received on September 13, 2015, from https://en.wikipedia.org/wiki/Benjamin_Bloom
Center for Health Policy and Management. (2013). Youth Sexual and Reproductive Health Baseline Survey in Yogyakarta. Faculty of Medicine, Universitas Gadjah Mada.


De Jose, E. G., (2013). *Filipino Adolescents’ Sexual Attitudes and Behaviors: Results from a University Cohort*, Department of Psychology, College of Social Sciences and Development, Polytechnic University of the Philippines, Manila, Philippines.


Gama, J. D. B., (2009). An Assessment of the Capacity of Faculty-Based Youth Friendly Reproductive Health Services to Promote Sexual and Reproductive Health Among Unmarried Adolescents: Evidence from Rural Malawi. Queen Margaret University.


Kathmandu University Medical Journal (2008), Vol. 6, No. 2, Issue 22, 1-5 Sexual And Reproductive Health Status Among Young Peoples In Nepal: Opportunities And Barriers For Sexual Health Education And Services Utilization.


Songara, D. (2011). Modifying Factors of Sexual Health Behaviour of Tribal Adolescents in Rajasthan, India – A review. India


Teijlingen, V. (2008). Sexual And Reproductive Health Status Among Young Peoples In Nepal: Opportunities And Barriers For Sexual Health Education And Services Utilization.


Utomo, I. D. et. al. (2013) Adolescent Pregnancy in Indonesia: A Literature Review. Australian Demographic and Social Research Institute The Australian National University


Abstract

It has been agreed that human health has been increasingly harmed by pollution on air, water, and soil, which comes mainly from chemical substances originated from natural and anthropogenic (contribution made by human) sources. Currently around 144,000 chemical substances available thousands of those chemicals have inadequate data to predict their exposure and toxicity. To address the issues of environmental contamination, since years ago the scientists have been developing many theories and techniques to deal with. Bioremediation, phytoremediation, mycoremediation, oxidation, demobilization, to name some of their works. However, some gaps are still exist in relation with the studies about human health exposures from some numbers of chemical substances. In particularly, understand the baseline condition of human health, and it relations to environmental condition is not less important to prevent the global human or public health issues toward better the living quality, with consideration to the ‘human uniqueness’. This gap should be filled by public health scientists to balance the progress of research on chemicals contamination effects on the water, air, and soil environment.

Key words: chemical contamination, human health impact, risk assessment, toxicity

Introduction

CRCCare, Australia-based centre for research and utilisation of contamination assessment and remediation technologies, which is now developing innovative ways to remediate and prevent contamination of soil, water & air, initiated an international conference named “Clean-up 2017 – International Conference on Contaminated Site Remediation” on 18 – 19 May 2017 in Bandung. The event was attended by 150 participants from universities, government bodies, consultant services, laboratory services, and research centres from Australia, UK, Hong Kong, Indonesia, The Philippines, and others.

During those two-days interactive discussion, both speakers and audiences were trying to address some questions i.e. why remediation is needed?, what is current approach to do remediation works?, what is the current technologies applied?, do they address the human health issues?, and what is the future challenge for human health studies?, and others.

This paper describes the results of the presentation and discussion during the conference with particular focus to the human health topics.

THE SOURCE OF CONTAMINATION AND ITS MANAGEMENT

According to the presentation from Nauri (2017), the source of contaminants could be from natural process of pedogenesis that lead to mineral breakdown and release of metalloid/non-metal contaminants (e.g. Pb, Cu, Ni, P, etc.), e.g. dust storms. It causes a broadacre and diffuse contamination. The second source is from the contribution of human activities (anthropogenic), such as mining, agricultural, industrial, etc., which causes point source or site contamination. Taken from UNEP report in 2013, Naidu (2017) also mentioned that there are estimated 144,000 registered chemical, with 3 new potential toxins per day. Reported in 2004,
around 4.9 million deaths were attributable to environmental exposure and management of selected chemicals, higher than HIV/AIDS (approx. 2 million) and tuberculosis (approx. 1.5 million). Majority of contaminated sites exist where most people live, urban/suburban regions in most country. In addition, thousands of these chemicals have inadequate data to predict their exposure (95%) and toxicity (99%) to the human health (Dong and Naidu, 2017).

In Indonesia, contaminated sites could be classified with consideration to the size of activities, as shown on the Table 1 (Purnamasari, 2017).

<table>
<thead>
<tr>
<th>Table 1. Contaminated sites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial Activities</strong></td>
</tr>
<tr>
<td>Potential contamination</td>
</tr>
<tr>
<td>Area exposure</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**INDONESIA REGULATORY FRAMEWORKS**

According to Ministry of Environment and Forestry (MOEF), several regulatory framework on hazardous and toxic waste contaminated site clean-up in Indonesia are already set up, i.e.:

1. Act No. 32/2009 regarding Environmental Protection and Management, Article 46 about obligation for central & local government to provide a clean-up fund for areas already contaminated or deteriorate and Article 54 about clean-up/decontamination general referrals.

2. Government Regulation No. 101/2014 regarding Hazardous and Toxic Waste Management, Article 198 about obligation for responsible parties who manages hazardous and toxic waste to do a clean-up/decontamination, and strict liability principals.


**TECHNOLOGIES TO MANAGE OR REMEDIATE THE CONTAMINATION**

In general, Naidu (2017) presented the classification of technologies to deal with the contamination as below:

1. Isolation and containment: engineering, excavation, disposal, stabilization, solidification
2. Chemical process: oxidation-reduction, de-chlorination, hydrolysis, pH adjustment, immobilization
3. Phytoremediation: plant, microbial, mycorrhizal
2. Physical-thermal process: desorption, incineration, vitrification
3. Several examples of the implementation of remediation technologies presented on the conference, such as mycoremediation, a bioremediation method by using fungi (Suhardi, 2017), and isolation and containment of lead-contaminated soil at Cinangka case (Purnamasari, 2017). Reviews of current bioremediation technologies were also presented by some authors.

**THE EFFECTS TO THE HUMAN HEALTH – CASE STUDY FROM CONTAMINATED SITE IN CINANGKA – BOGOR**

The case was about open dumping of lead and mercury containing slag and other hazardous wastes contaminated soil, mostly lead and mercury containing slag from illegal artisanal battery smelter facilities, which was presented by Purnamasari (2017). From the studies, the Blood Lead Level (BLL) of children blood samples were above the normal standard of WHO (10 µg/dl).
The average number was 36.62 µg/dL, with minimum number was 16.2 µg/dl, and the maximum number was above 60 µg/dL. Moreover, children who live in surrounding smelter area suffered IQ/hearing growth, nerve problem, anaemia, kidney function, mental and physical disability etc.

Moreover, the MOEF found the fact that results from school children abnormal physical-medical (240 samples) showing that 51% (123 cases) suffered conjunctivitis, 10% (23 cases) suffered footdrop, 7% (17 cases) had motoric weakness, 7% (17 cases) suffered wrist drop, 6% (15 cases) had dwarf, 5% (12 cases) suffered idiot/mental deficiency, 5% (11 cases) suffered pulmonary ronchi, 4% (9 cases) disability, 4% (9 cases) suffered abdominal pressurized pain, and 4% (4 cases) suffered tremor.

Clean up of contaminated soil was initiated from 2012, and in 2014 the first step of clean up with an on-site method of encapsulation of waste and using the top of the encapsulated site as a football field was conducted. It consisted of cleaning of 2,850 m3 (15,726 tonnes) lead-contaminated soil at 4 ha of land, and covering the almost the entire village of Cinangka (+350 ha) which the pollution levels that vary between 400 ppm - 100,000 ppm. Clean-up/remediation methods was using encapsulation, means isolating the lead-contaminated soil in a hole and covered (encapsulated) by clay layer (50 cm thickness) and geomembrane (1.5 mm thickness).

**FUTURE CHALLENGES**

Some gaps are still exist in relation with the studies about human health exposures from some numbers of chemical substances. In particularly, understand the baseline condition of human health, and it relations to environmental condition is not less important to prevent the global human or public health issues toward better the living quality, with consideration to the ‘human uniqueness’. This gap should be filled by public health scientists to balance the progress of research on chemicals contamination effects on the water, air, and soil environment.

As described by Dong and Naidu (2017), human health risk assessment is an important part to understand the risk characteristics of hazardous and toxic substances and their impacts to the human health. There are four pillars in human health risk assessment i.e. toxicity identification, dose-response assessment, exposure assessment, which then are summarized as toxicity characterisation (Figure 1). However, uncertainties of the assessment results are still exist due to the lack of the knowledge of many influence-factors. The exposure assessment uncertainties could be from the factors of ‘scenario’ (descriptive errors, aggregation errors, judgment errors and incomplete analysis), ‘model’ (assumptions for the correlation among exposure events; including model structure, detail, validation, extrapolation, resolution, boundary), and ‘parameter’ (in specifying the point or distribution estimate; including measurement errors, sample uncertainty, data type, extrapolation uncertainty and statistical distribution selection). In addition, the dose-response assessment uncertainties could be from the factors of ‘database-related’ (data quality, heterogeneity among studies), and ‘extrapolation’ (extrapolating reference dose, including interspecies, intraspecies, exposure duration, route to route; model selection; distribution assumption). Both of the steps then could determine the level of uncertainties of risk characterization, which is generally influenced by the decision on determining the toxicity criteria, site-specific scenario, and parameter selection in the assessment process.
Moving forward to achieve more satisfying results of assessment, some advanced methods are now being developed and implemented, moving from field observation to field operation, driven by major scientific advances in analytical methods, biomonitoring, computational tools, and a newly articulated vision for a greater impact in public health. One of them is exposomic, where the exposome concept refers to the totality of environmental exposures from conception onwards, and is a novel approach to studying the role of the environment in human disease.

Furthermore, key events characterization and Aggregate Exposure Pathway (AEP) were constructed from conventional and emerging exposure science tools, exposomics, biomonitoring, and computational exposure construction. The principle components of an Aggregate Exposure Pathway (AEP) cover all necessary levels of ecological, biological and physical organization from sources to target tissue (Figure 2). Each box represents a key event which is a measurable change in a chemical state and concentration that is essential, but not necessarily sufficient, for the movement of a chemical from a source to the target site exposure. Each arrow represents a key event relationship which links a pair of key events. AEP’s can be used to accumulate information for source mitigation, or use in epidemiology and toxicology (Teeguarden, et. al., 2016).

Conclusion

Environmental contamination is a global problem, and long-term exposure to contaminants can have devastating effects on human health and the environment. The impacts are seen only when people or the natural environment are harmed, when it is too late to prevent the damage. It has reached a critical point now.

From the description above, which is a summary of the results of conference activities related to the contamination of hazardous and toxic materials on the land, with a focus on the impact on human impact as exemplified in the case in Cinangka, it appears that there are still many
aspects that need to be studied and researched in Indonesia. Currently, the field of land remediation sciences and technologies in Indonesia have been and being continued to be developed and implemented in the field.

A further challenge is the development in terms of risk assessment for human health, which in this conference was not much exposed. This is an opportunity to be occupied by the experts in the field of medical and public health sciences.

Acknowledgment

The first author thanks to Prof. Ravi Naidu, the CEO & Managing Director – CRC CARE, New South Wales, Australia for supporting and managing a valuable conference in Indonesia regarding the topic of site contamination.

References


The Quality of Life of Diabetes Mellitus Patients Treated with Oral Antidiabetic Therapy of Prolanis Program at Puskesmas Ujung Berung Indah Bandung 2017

DestiAmping *, Linlin Karlina Lestari 1,2
1,2 Public Health Department, Stikes Jenderal Achmad Yani Cimahi
*Email: desti.amping@gmail.com

Abstract
The quality of life of Diabetes Mellitus (DM) patients will affect some aspects of their lives, so that the Indonesian Government through Badan Penyelenggaraan Jaminan Sosial (BPJS) Kesehatan holds a program known as Program Pengelolaan Penyakit Kronis (Prolanis). Prolanis is an integrated program which involves its participants, health facilities and BPJS Kesehatan to reach the optimum quality of life at effective and efficient health cost. This study aimed to define the quality of life (QoL) of Prolanis Participants who were treated with Oral Antidiabetic drugs (OAD) Therapy at Puskesmas Ujung Berung Indah Bandung, based on patients’ characteristics and the pattern of OAD given to the patients. This research used Cross Sectional design. The data was collected concurrently from interviews and participants’ medical records. The subjects were DM type 2 patients who has been participating in Prolanis for at least 4 months and treated with OAD Therapy. The QoL was measured by Diabetes quality of life clinical trial questionnaire (DQLCTQ). The data was analyzed by using independent sample t-test. The result showed that the average QoL score of patients with OAD therapy was 69.1 whilst those with combined OAD therapy had the average score of 76.2. Thus, the pattern of the therapy was considered to affect the life QoL (p=0.021) meanwhile gender, age, education background, regular income, DM duration and complication did not affect the quality of life.

Key words: DM type 2, DQLCTQ, Prolanis, OAD, Quality of life

Introduction
Fifty percent of people with Diabetes Mellitus in Indonesia remained undiagnosed and only two third of the people who are diagnosed take the therapy, whether it is pharmacological therapy or non-pharmacological therapy (Perkeni 2015). Indonesian Government through Badan Penyelenggaraan Jaminan Sosial Kesehatan (BPJS Kesehatan) takes a preventive action to anticipate the increased prevalence of chronic diseases through a program known as Program Pengelolaan Penyakit Kronis (Prolanis). This is an integrated program which involves the participants of National Health Assurance or Jaminan Kesehatan Nasional (JKN), health facilities and BPJS Kesehatan to reaching the optimum quality of life through efficient and effective health cost (BPJS Kesehatan, 2014).

Diabetes Mellitus is known as an uncureable disease, and the targets of Diabetes Mellitus Type 2 management therapy is to increase the quality of life (QoL) of the patients. Low QoL may disrupt the metabolism control, thus the patients have to increase their lives quality (Triplit et al, 2005; Shen et al, 1999). Diabetes patients need continuous therapy so the effectiveness and side effects of the therapy can affect patients’ quality of life. At the early stage, patients with diabetes mellitus type 2 only require single or combined Oral Antidiabetic Therapy without any insulin therapy. Patients with diabetes mellitus type 2 are generally treated with oral antidiabetic drugs of which side effect is hypoglycemia. This hypoglycemic effect is caused by the use of glibenclamide which are mainly provided at Puskesmas. Otherwise, metformin has less hypoglycemic effect (Jameson JI, 2010).

Combined therapy of metformin and sulfonylurea showed more decrease on blood sugar than monotherapy as it showed the same result on HbA1c level (Razmi Zakiah, 2017). Metformin-sulfonylurea combined therapy has a good efficacy in controlling fasting blood glucose level. However, long term metformin-sulfonylurea combined therapy without any control on patient’s diet may cause hypoglycemia and some digestive problems (Chien H, et al, 2007).

Puskesmas Ujung Berung Indah Bandung provides glimepiride(sulfonylurea class), metformin (biguanides class), and acarbose as oral antidiabetic drugs. Sulfonylurea can be absorbed in the digestive system and reach the bloodstream in 15 minutes after per oral consumption. Patients whom are treated with sulfonylurea show 270 mg/dL or less decrease in
blood glucose under the treatment dosage (Lamos EM, et al., 2012). Metformin works by increasing insulin receptor sensitivity so it can consistently decrease 1.5-2% of the HbA1c level and 60-80 mg/dL of blood glucose level. Metformin can also keep the ability of the body to decrease fasting blood glucose level when it is extremely elevated (>300 mg/dL) (Triplit et al., 2005)

Besides the medications, patients with diabetes are likely to suffer from acute or chronic complication. The main complications are microvascular complications such as retinopathy, nephropathy, and neuropathy. There are also several macrovascular complications such as Cardiovascular Disease (CVD), Cerebrovascular Disease or stroke and vasa perifer disease. (Asdie, 2000) This complications can also affect patients’ quality of life. Some research showed that characteristic factors also affects patients’ quality of life. Study conducted by Rafika in 2011 found that patients’ characteristics (including gender, age, Diabetes Mellitus duration, complication, education level, working status and marital status) affects patients’ quality of life, but has no effects on the difference of the quality of life between patients who were treated with single or combined oral antidiabetic therapy.

Shen et al., 1999 in the study of Diabetes Mellitus patients’ quality of life developmet and validation, *Diabetes quality of life clinical trial questionnaire* (DQLCTQ), found that low quality of life and psychological status of patients with diabetes could disrupt the metabolism control. Treatment satisfaction, absence of pressures, mental health and self satisfaction were responses to the clinical changes of metabolism control. The researchers chose Puskesmas Ujung Berung Indah as the research location because it has quite many diabetes mellitus type 2 patients who were joining Prolanis program.

This study aimed to define the quality of life of diabetes mellitus type 2 patients who were joining Prolanis program for at least four months sequentially and were treated with Oral Antidiabetic drugs Therapy based on patients’ characteristics and the pattern of Oral Antidiabetic drugs Therapy given to the patients.

**Method**

This is an analytical study with cross sectional method. The participants of this study were Diabetes Mellitus type 2 patients who were participating in Prolanis at Puskesmas Ujung Berung Indah, Bandung. The participants should be participating in Prolanis for at least four months sequentially (January to April 2017) as the inclusive criteria. Participants with mental illness or language barrier and uncomplete medical records should be excluded from this research. There were 39 patients who met the inclusive and exclusive criteria.

The data was collected concurrently by giving questionnaires to the diabetes mellitus type 2 patients whom were treated with oral antidiabetic therapy during this study. The data was collected from Diabetes Quality of Life Trial Questionnaire (DQLCTQ) and the record of patients’ therapy were taken from patients’ medical records. The data was then analized by using independent sample t-test.

**Result**

There were 39 diabetes mellitus type 2 patients who got the Oral Antidiabetic therapy and participated in Prolanis at Puskesmas Ujung Berung Indah, both single and combined therapy, from January until April 2017 who met the inclusive criteria. Characteristics of the participants can be seen from table 1.

<table>
<thead>
<tr>
<th>Table 1. Characteristics of the participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>≤ 60 years</td>
</tr>
<tr>
<td>&gt; 60 years</td>
</tr>
<tr>
<td>Education background</td>
</tr>
<tr>
<td>Not passing senior high school</td>
</tr>
<tr>
<td>Passing senior high school</td>
</tr>
</tbody>
</table>
Income
\begin{itemize}
\item \textless \text{regional minimum income} \quad 34 (87.2)
\item \textgreater \text{regional minimum income} \quad 5 (12.8)
\end{itemize}

DM Duration
\begin{itemize}
\item \textless 5 years \quad 35 (89.7)
\item \textgreater 5 years \quad 4 (10.3)
\end{itemize}

Complication
\begin{itemize}
\item Without complication \quad 21 (53.8)
\item With complication \quad 18 (46.2)
\end{itemize}

Oral Antidiabetic Therapy
Oral antidiabetic used by the patients of diabetes mellitus type 2 at Puskesmas Ujung Berung Indah were glimepiride from sulfonylurea class, metformin from biguanide class, and acarbose from alpha glucosidase inhibitor class. Table 2 shows the data of Oral antidiabetic drugs usage.

\begin{table}[h!]
\centering
\caption{Oral antidiabetic drugs}
\begin{tabular}{|l|l|}
\hline
OAD therapy pattern & n (%) \\
\hline
1. Single & \\
Metformin & 7 (17.9) \\
sulfonylurea & 1 (2.6) \\
\hline
2. Combined 2 OAD & \\
Metformin+sulfonylurea & 30 (76.9) \\
\hline
3. Combined 3 OAD & \\
Metformin + sulfonylurea+ acarbose & 1 (2.6) \\
\hline
\end{tabular}
\end{table}

The oral antidiabetic drugs used at Puskesmas Ujung Berung Indah (glimepiride, metformin and acarbose) were all generics. Generally, the patients of diabetic mellitus type 2 are treated with combined therapy of metformin and sulfonylurea.

Quality of life
The quality of life of the participants in this study were measured from their physical and social function and also their feeling of physical and mental health. Some particular demographic and psychosocial factors can also affect the quality of life, hence those factors should be controlled when the researchers were comparing the groups of the participants (Rubin and Peyrot, 1999). This study did not measure each factor or domain of the quality of life such as physical function, energy, health pressure, mental health, self satisfaction, satisfaction of the medication and the frequency of the symptoms, but the average score of the quality of life.

Table 3 shows the result of statistical analysis of the participants’ characteristics, the type of the therapy, and the average score of the quality of life. The analysis result showed a significant correlation between the type of the therapy and the average score of the quality of life of the diabetes mellitus type 2 patients.

The life quality of the diabetes mellitus patients is affected by the type of the therapy taken by the patients. Table 3 shows that the combined therapy of diabetes mellitus type 2 patients had better quality of life than the patients who were treated with single therapy. The difference was quite significant. The independent sample t-test result showed a significant difference with probability value equals to 0.021 (p<0.05).

\begin{table}[h!]
\centering
\caption{Characteristics of the participants and the quality of life score of each characteristic}
\begin{tabular}{|l|l|l|}
\hline
Characteristics & n (%) & Average quality of life score & p value \\
\hline
Gender & & & \\
Female & 24 (61.5) & 75.0 ± 6.46 & 0.760 \\
Male & 15 (38.5) & 74.2 ± 9.95 & \\
\hline
Age & & & \\
\textless 60 years & 25 (64.1) & 75.4 ± 7.77 & 0.504 \\
\textgreater 60 years & 14 (35.9) & 73.6 ± 8.20 & \\
\hline
Education background & & & \\
\end{tabular}
\end{table}
Designated therapy for Diabetes Mellitus type 2 treatment is oral antidiabetic drugs. Combined therapy (metformin and sulfonylurea) can eliminate the side effect of the single therapy such as hypoglycemia and digestive problems so that it can affect the quality of life of the patients. This study showed that the quality of life score of patients who were treated with combined therapy was better than the quality of life score of patients who were treated with single therapy. A study conducted by Chei H et al (2007) showed a similar result, combined therapy of metformin and sulfonylurea had a good efficacy in controlling fasting blood glucose level. Another study showed that combined therapy was more effective in controlling hyperglycemia than the single therapy of the patients with uncontrolled blood glucose (it also resulted more decrease on HbA1c) (Lamos EM et al, 2012).

Conclusion

1. Participants’ characteristics factor (age, gender, DM duration, income and complication) had no effect on the quality of life of diabetes mellitus type 2 patients.
2. Diabetes Mellitus type 2 patients treated with combined therapy had better quality of life than those treated with single therapy.

Acknowledgment

This research is made possible by support from grant administered by Community Health Centers (Puskesmas) Ujung Berung Indah Bandung, West Java and department of research Stikes Jenderal Achmad Yani Cimahi.

References


Rafika Mutia Sari, 2011 Evaluation Quality Of Life Of Type 2 Diabetic Patients With Oral Antidiabetic Therapy At Ambulatory Clinic in Dr. Sardjito, Vol 1 No 1.

Abstract
Sexual abuse on children is an incident that is increasing every year in Indonesia. Noted from The Indonesian Child Protection Commission (KPAI), data obtained that about 240 cases in West Java this year, as many as 30 cases of which occurred in West Bandung. Health promotion media, the video from UNICEF contains a series of cartoon images can also attract the attention of respondents during the counseling, especially for children. The purpose of this study was to determine the influence of providing health promotion video of UNICEF version to the knowledge of sexual abuse on 5th grade students of SDN Pamucatan West Bandung Regency in 2017. The method used is pre experiment, research design using one group pre test and post test. Samples are 5th grade students in SDN Pamucatan as many as 32 people with total sampling technique. Primary data collection using questioner, data is analyzed by bivariate. The results showed that from 32 respondents before provided the health promotion as many as 15 (46.9%) respondents have good knowledge while after provided health promotion as many as 27 (84.4%) have good knowledge. So that there is influence providing of video of health promotion UNICEF version on 5th grade children of SDN Pamucatan West Bandung regency in 2017. It is suggested that the school and teachers collaborate with parents to continue providing sexual education so that children understand about sexual abuse, so the children's knowledge is much better after provided video of UNICEF version.

Key words: Child sexual abuse, knowledge, Video media of UNICEF

Introduction
Technological improvements that are happening at this time have brought the impact of change for society, positive and negative impact. Technological improvement makes communication between countries more noticeable. The most noticeable impact is on the cultural, moral, and social order of society in general and particularly on the younger generation.

Lately, there are many cases of child sexual abuse where the perpetrator is an adult and most of them are known to the victim. Sexual abuse and sexual violence in children occur every year and this is not a new issues. The United Nations for children, UNICEF states that 1 out of 10 girls in the world were sexually abused (Kristanti, 2014). Child sexual abuse and violation in Indonesia also continued to increase from January to June 2014 became 1,622. The records of the Indonesian Child Protection Commission (KPAI), states from directly complaints, or by mail, telephone, and email. Cases of sexual violence place at the first highest position with complaints as many as 459 cases on May 2014. Sexual violence such as rape, sodomy, abduction and pedophilia (Diah, 2014).

Sexual violence cases based on the age, mostly occurred at the age of 6-12 years (33%) and the lowest age are about 0-5 years (7.7%) (IDAI, 2014). This is because the child is an ideal victim who cannot resist. Children under the age of 8 years are usually invited to play to prevent children complain to their parents. Pre-teen children will be threatened and intimidated, so they will feel ashamed to make a complaint. The survey of Violence on Children held by the government of Indonesia and UNICEF in March to April 2014, data obtained that 1 of 12 boys experiencing violence and the girls experiencing sexual violence (Rofiq, 2014).

The series of cartoon pictures presented by UNICEF can attract the attention of the respondents during the counseling, especially for children. This is in accordance with Rahayu's (2012) research. She suggests that videos containing cartoons can improve cognitive development seen from pre and post test after the video given. Teaching media which can motivate respondents'
interests and actions is the instructional medium realized with entertainment techniques such as video. Therefore, the video method can improve the knowledge of the respondents because it can increase the motivation of interest and the action of the respondent when the counseling takes place (Rahayu, 2012).

<table>
<thead>
<tr>
<th>Kecamatan</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Batu jajar</td>
<td>2</td>
<td>11.76</td>
<td>1</td>
</tr>
<tr>
<td>Champelas</td>
<td>2</td>
<td>11.76</td>
<td>2</td>
</tr>
<tr>
<td>Cililin</td>
<td>2</td>
<td>11.76</td>
<td>2</td>
</tr>
<tr>
<td>Cipatat</td>
<td>1</td>
<td>5.86</td>
<td>1</td>
</tr>
<tr>
<td>Cisarua</td>
<td>2</td>
<td>11.76</td>
<td>3</td>
</tr>
<tr>
<td>Lembang</td>
<td>2</td>
<td>11.76</td>
<td>2</td>
</tr>
<tr>
<td>Ngamprah</td>
<td>3</td>
<td>17.65</td>
<td>2</td>
</tr>
<tr>
<td>Padalarang</td>
<td>2</td>
<td>11.76</td>
<td>4</td>
</tr>
<tr>
<td>Parongpong</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100</td>
<td>18</td>
</tr>
</tbody>
</table>

Based on the table, it can be seen that the highest trend of increasing child sexual violence cases occurred in Padalarang District as many as 10.46%, followed by Cisarua as many as 4.90% and the lowest one is in Parongpong and Cipatat. The purpose of this study was to determine the influence of providing health promotion via video of UNICEF version to the knowledge of sexual abuse on 5th grade students of SDN Pamucatan West Bandung Regency in 2017.

**Method**

The type of research is pre-experiment. The research design used was one group pretest posttest design. The design was used one group. The respondents have been measured the knowledge about sexual abuse on child before and after provided health promotion from UNICEF. The population of the research was all students of SDN Pamucatan, Padalarang, West Bandung regency in 2017 as many as 32 people.

To determine the number of samples, the researchers used the total sampling with the sample of students in SDN Pamucatan, West Bandung regency as many as 32 people. The samples of the research were children aged 10-11 or equivalent to the 5th grade elementary school. Data analysis is conducted by bivariate.

**Results**

**The Description Of Child Knowledge Before Provided The Video Of UNICEF Version On 5 Grade Students SD Pamucatan In West Bandung Regency 2017.**

Based on Table 2, it obtained that the child knowledge before provided health promotion of sexual abuse by using video of UNICEF version. The majority of respondents as many as 15 people (46.9%) included in good knowledge, but there are still a few respondents as many as 9 people (28.1% %) have less knowledge.
The Distribution Of Child Knowledge Before Provided Health Promotion By Video Of UNICEF Version

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>9</td>
<td>28.1</td>
</tr>
<tr>
<td>Enough</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Good</td>
<td>15</td>
<td>46.9</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100</td>
</tr>
</tbody>
</table>

The Description Of Child's Knowledge After Provided Health Promotion Video From UNICEF Version On 5 Grade In SD Pamucatan In West Bandung Regency 2017.

Based on Table 3, it is obtained that the child knowledge after provided health promotion video about child sexual abuse from UNICEF version has increased. The majority of respondents are as many as 27 people (84.4%) have good knowledge, and the respondent with lack of knowledge as many as 4 people (12.5%).

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Enough</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Good</td>
<td>27</td>
<td>84.4</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100</td>
</tr>
</tbody>
</table>

Influence Of Providing Video Of Health Promotion Of Child Sexual Abuse UNICEF Version Towards Knowledge Of Child Sexual Abuse At SDN Pamucatan West Bandung Regency In 2017

Based on Table 4, it is obtained from the results of statistical tests using paired sample t-test, that the average knowledge of children before provided health promotion by video of UNICEF version was 1.19. The average of child knowledge after provided the video is 2.84. The result is obtained P value = 0.000 <(0.05) so Ho is rejected so it can be concluded that there is influence of providing video health promotion of UNICEF version towards 5th grader SD Pamucatan West Bandung Regency in 2017

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Mean Differences</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>32</td>
<td>1.19</td>
<td>1.656</td>
</tr>
<tr>
<td>Post</td>
<td>32</td>
<td>2.84</td>
<td></td>
</tr>
</tbody>
</table>
Discussion

The process of behavioral change on individuals, groups, or communities to be more independent in achieving healthy life goals. According to Machfoedz (2005), health education is an activity done by spreading the message, instilling confidence, so that community subconsciously, know and understand, but also willing and able to do a suggestion that correlate with health. The purpose of providing health education is to improve the ability of individuals, groups, and communities in fostering and maintaining healthy behaviors by physically, mentally and socially to achieve healthy life goals (Mubarak, 2009). According to Keleher, 2007, health promotion is a social process and political that not only emphasizes the strength of individual skills and abilities, but also changes in social, environmental and economic conditions that affect to individuals and communities health.

But until now, there is still distortion understanding of health promotion. Health promotion is still understood solely as a substitute for the term health education. Institutionally, it may be true that health promotion is a substitute for education or health counseling, but in a different concept, it would be better to say that health promotion is a revitalization of health education (Notoatmodjo, 2012).

Health promotion cannot be separated from activities or efforts to deliver health messages to communities, groups, or individuals. With the message, it is hoped that people, groups and individuals can obtain a better knowledge about health. Finally, its knowledge ultimately expected to affect the behavior. In other words, the promotion is expected to bring effect to the change of target behavior (Notoatmodjo, 2012).

The content of health promotion presented in this study is about sexual abuse. Sexual abuse is an annoying, irritating, and unexpected action committed by a person or group of people to another party which directly related to the gender who is abuse and perceived to degrade of the person dignity (BKKBN 2013). Sexual abuse is any form of behavior that connotes or leads to sexual matters that are unilaterally and unexpectedly by the person so that cause negative reactions such as shame, anger, hatred, offense and so forth on the abuse victim (Nurlaili, 2010).

Health promotion is also an activity that has input and output process. The purpose is to achieve the goal of behavior change, influenced by many factors. In addition it is needed to provide the method, material or messages, the officers, also tools aids/ props or media. In order to achieve an optimal result, those factors must work together in harmony. This means that certain inputs must use a certain way as well. The material must be tailored to the target or the media. For group objectives, the method should be different from the target and individual goals. Last, mass goals must be different from individual and group goals (Notoatmodjo, 2012).

The media used in this research is the video of UNICEF version. Media is one of the decisive factors in the success of learning. Through technological media, video can clarify the message by seeing directly the purpose of the message delivered in a screen. The video method can present what experience that did not experienced directly by the respondent because the audio visual presents the real situation of the information conveyed to create a deep impression. In addition to accelerate the learning process, video also can improve the level of intelligence and change the passive and static attitude into active and dynamic attitude (Wahyuningsih RA.2011).

Video of UNICEF version is made by presenting a combination of images and words that can be understood by the respondents. A series of images and words is combined and are more effective for retaining memory than just images or words. It is in line with the research from Mills and Mc Mullan in 2009 about “short-term memory obtained from images, words and combinations of images and words”. The presentation of colorful images and words in the video provided to the respondents also has an effect on the increase of knowledge, where the colors have a strong effect on short-term memory and visual attention (Susanto R. 2012).

The series of cartoon images presented can also attract the attention of respondents during the counseling. This is in accordance with the research of Reny Dwy Rahayu (2012), she states that video containing cartoons can help improve cognitive development seen from the test scores before and after provided the video. Teaching media that can motivate the respondents' interests and actions is the instructional medium realized with entertainment techniques such as video, therefore the this method can increase the knowledge of the respondent because it can increase the motivation of interest and the action of the respondent when the counseling takes place (Rahayu RD).
The effectiveness of a video media is also stated by Amelia Nurfalah (2014). She mentions that there is an increase of in child knowledge as many as 5.3 after provided health promotion through video. This research is also in line with the research conducted by Ervina (2013) which shows that there is influence of audio visual video counseling to the level of knowledge about SADARI.

Audiovisuals gives a huge contribution to the changing of behavior, especially in information and persuasion aspects. Audiovisual media has two elements that each of them have a power that will synergize into a great one. This media provides a stimulus to hearing and sight, so that the results obtained can more maximum (Yuliastari, 2014). This is in line with what Dwyer says in his book "Strategic for Improving Visual Learning", humans learn 1% through the five senses, 1.5% through touch, 3.5% through smell, 11% through hearing, 83% through sight. Last, the five senses that deliver the knowledge to the brain are the eyes (approximately 75% to 87%), while 13 to 25% are channeled by the other five senses (Liana, Lisa, 2015).

In the questionnaire analysis, to improve the knowledge in questions concerning understanding, forms, and prevention efforts of child sexual abuse in media used is the video of UNICEF's version. So it can be seen that child knowledge increases after providing health promotion in the form of video version by UNICEF.

Conclusion
Based on the results of research that has been done, the statistical test results obtained P value = 0.000 (<0.05) then Ho is rejected which indicates that there is influence in providing video health promotion of UNICEF version to students in SD Pamucatan West Bandung 2017.

Acknowledgment
Acknowledgments author deliver to Stikes Jendral Achmad Yani Cimahi who has provided moral and material support and also to SDN Pamucatan who facilitated the implementation process of this research.

References
BKKBN. 2013. Pelecehan Seksual, Diperoleh Pada Tanggal 29 Oktober 2016 www.bkkbn.go.id
Study of Chemical Compound Content and Analysis of Glycoprotein Pokea Shell (*Batissa Violacea Celebensis Martens 1897*) from Southeast Sulawesi Province as Immunomodulators

1 Sri Anggarini Rasyid *, 2 Maria Bintang, 3 Bambang Pontjo Priosoeryanto 4 Ridwan Adi Surya

1 D-IV Health Analyst Study Program, Mandala Waluya Health Science College, 2 Department of Biochemistry, Bogor Agricultural University, IPB 3 Department of Veterinary Clinic, Reproduction & Pathology, Faculty of Veterinary Medicine, 4 Faculty of Forestry and Environmental Science, Halu Oleo University

* Email: anggarini.09@gmail.com

Abstract

Pokea shell (*Batissa violacea celebensis Marten 1897*) is a bivalve species originating from the Pohara River of Konawe Regency, Southeast Sulawesi. Water stew of meat shell that has never been used, it actually contains glycoprotein compound that can act as immunomodulatory agents or as antitumor. The purpose of this research is to process, and analyzes the extract results of chemical compounds on fresh, boiled and dried pokea shell, and test the effectiveness of pokea crude extracts by extracting glycoprotein, and subsequently can be made into dosage as a crude extract that is made as a food supplement (supplement food). Extraction of glycoprotein from shell has been done, by boiling the shell for 30 minutes and 60 minutes. The amino acid composition of the glycoprotein was analyzed by FTIR. The results showed that the result of glycoprotein with a boiling time of 30 minutes is higher than 60 minutes of boiling time. The glycoprotein content rendemen of pokea shell with 30 minutes boiling time is 4.42 gram, and 2.7 gram of 60 minutes of boiling time. It can be concluded that the extract of glycoprotein of pokea shell meat done for 30 minutes resulted in more amino acid variety than for 60 minutes. Further studies are needed to determine the levels and composition of the glycoprotein carbohydrates, it is important to know about the health benefits of each type of carbohydrate contained in the glycoprotein when used as food supplements.

Key words: Amino acids, Batissa Violacea glycoprotein, immunomodulators, Pokea shell

Introduction

Pokea shell (*Batissa violacea celebensis Marten 1897*) is a bivalve species of the Corbiculidae Family found in the Pohara River of Konawe Regency, Southeast Sulawesi (Bahtiar 2005). Pokea shell is usually traded in fresh form intact, fresh peeled, and satay. During processing, the nutrient content of a substance can be lost or damaged by sensitivity to heat, pH, oxygen, light, or combination of several factors (Harris 1988). Pokea shell is used by the local community, which is consumed daily by boiling. This is thought to affect the nutritional content. Many studies have proven that pokea shell is empirically believed to cure various diseases such as jaundice, malaria, asthma, lowering blood pressure and fever. The disease occurs due to infection by strange materials and microorganisms. When the body is infected with microorganisms, the body responds with macrophage and neutrophil activity mechanisms. In this case the oxidase and oxygenase enzymes will form various free radical compounds and reactive oxygen compounds, including hypochloric acid (HOCl) which will attack and destroy viruses and bacteria. Radical compounds are also very dangerous because of the potential to attack the body's cells. If this is not controlled, it will trigger the emergence of various chronic diseases (Winarsi 2007).

Shell can live in clean and polluted environments. When living in a polluted aquatic environment it will have a specific body defense system including the fight against substances that are toxic and carcinogenic. Shells contain glycoprotein compounds that can act as immunomodulatory substances with high activity. Glycoprotein is complex compounds between...
proteins with a covalently bonded oligosaccharide (glikan) chain. Glycoprotein is present in the human body, animals, viruses, bacteria, fungi and plants with various functions, for example as: structural molecules, lubricants and protective materials, transporting molecules (vitamins, lipids, minerals and trace elements), immunologic molecules, hormones, enzymes, cell/cell recognition, lectins and antifreeze substance. Glycoprotein molecular weight ranges from 15,000 to more than 1,000,000.

Many cases of disease are as result of the occurrence of irregularities or metabolic disorders in the receptor system on the cell membrane. Glycoprotein as one component of cell membrane plays an important role in maintaining normal metabolic conditions in the cell membrane. Damage to the cell membrane system may occur due to the fraction of proteins or carbohydrates undergoing mutations or damage by chemicals or viruses thus causing the reaction signals to process of metabolism cannot run smoothly or become disturbed. The next consequence is arising discomfort in the body that is perceived as a disorder or disease.

The content of glycoprotein in shell meat is estimated to be about 0.5% so it is not possible for us to get the glycoprotein from the shell directly. Therefore, this study was conducted to obtain glycoprotein from the shell meat. Therefore, the study in this research is considered very important to be done for efforts to increase the added value of pokea shell boiled water wasted through the production of the preparation as supplement food (supplement food). Based on this background, thus in this study conducted a study of chemical compound content and glycoprotein extraction and analysis of Glycoprotein amino acid composition from Pokea shell species taken from fishermen in Pohara River.

Method

INGREDIENTS. The material used is pokea shell, obtained from fishermen in Pohara river Konae regency of Southeast Sulawesi Province. Sample of fresh shell removed his skin, then shell is washed, ground, and stored in a tightly sealed container. If the chemical analysis cannot be done directly, then the sample is stored in a freezer.

METHOD. Chemical analysis. chemistry analysis including drying shrinkage, crude protein content (total nitrogen), and non protein nitrogen (NPN) done levels to the fresh shell samples. The shrinkage drying were determined by gravimetric method, crude protein content and NPN by Kjeldahl method.

Glycoprotein extraction. Glycoprotein extraction used Sasaki et al. method with slight modifications. A total of 500 grams of shell meat in 100 ml of 10% NaCl solution is boiled at 100 °C, each for 30 minutes and 60 minutes. The hot solution is then filtered through Whatman's no. 1, the obtained filtrate was allowed to cool at room temperature, then stored in the refrigerator for 1 hour. Furthermore, ethanol is added to the cold filtrate (ratio 1: 2, v / v) so that the glycoprotein deposits occur. To complete the precipitation, the solution was centrifuged at 12,000 rpm at 4 C for 10 min. The filtrate was removed and the resulting precipitate was dissolved in 0.01 M phosphate buffer pH 7.4, and then purified by passing through the Sephadex G-100 chromatography column to remove salts and filter the proteins with molecular weight between 5,000-10,000. The obtained filtrate is freeze drying at -40 °C, 200 × 10 mbar pressure. The extract of glycoprotein obtained in powder form, then weighed and analyzed the water content and amino acid content.

Amino acids analysis. The extract of glycoprotein obtained, then analyzed its amino acid content using FTIR (Fourier transsform Infrared)

Result

Morphometric and Rendement Measurements

Morphometrics of pokea shells

Measurement of morphometric of pokea shells was conducted on 104 samples. These measurements include intact weight, meat weight, shell weight, shell length and shell width to determine the yield. The average results of morphometric measurements can be seen in Table 1.

Table 1. Results of morphometric measurement of pokea shells

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Big size (n = 15)</th>
<th>Medium size (n = 45)</th>
<th>Small size (n = 44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight intact (g)</td>
<td>73.47 ± 18.39</td>
<td>23.89 ± 10.79</td>
<td>6.08 ± 1.46</td>
</tr>
<tr>
<td>Weight of meat (g)</td>
<td>18.43 ± 7.36</td>
<td>6.11 ± 3.47</td>
<td>1.48 ± 0.46</td>
</tr>
</tbody>
</table>
The results of morphometric measurements on pokea shells, indicating diversity of sizes ranging from large, medium, and small. This is in accordance with Bahtiar report (2005) that the pattern of pokea shell population growth is relatively fast to slow due to the influence of sand mining activities and the removal of pokea shells. The Pokea shells meat multi-storey extraction can be seen in table 2.

Table 2. Pokea shells meat multi-storey extraction

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Extract Rendement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pokea Fresh Shells</td>
<td>1,6984%</td>
</tr>
<tr>
<td>Pokea Rebus Shells</td>
<td>3,638%</td>
</tr>
<tr>
<td>Pokea dried shells</td>
<td>6,2328%</td>
</tr>
</tbody>
</table>

Meat pokea shells rendemen. Rendement is the percentage between the weight of a portion which can be utilized compared to the weight of the whole material. The part commonly used by the community as food is the meat. Based on the measurement results pokea shells meat rendemen is an average of 27,8%.

Shrinkage drying. A shrinkage drying analysis of a food product is required to calculate the level of the compound / substance in units of dried weight. Wet marine products typically contain moisture content of 70-85%. The results of proximate analysis on pokea meat include protein, fat, ash, and water. The proximate composition of fresh, boiled, and dried pokea meat can be seen in Table 3.

Table 3. Proximate composition (% w/w dry weight) of fresh, boiled, and dry pokea shells

<table>
<thead>
<tr>
<th>Proksimat Composition</th>
<th>Fresh</th>
<th>Boiled</th>
<th>Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Water</td>
<td>85,3279%</td>
<td>71,9222%</td>
<td>32,8539%</td>
</tr>
<tr>
<td>Ash</td>
<td>0,7637%</td>
<td>1,2430%</td>
<td>3,4967%</td>
</tr>
<tr>
<td>Fat</td>
<td>1,0039%</td>
<td>2,7752%</td>
<td>12,367%</td>
</tr>
<tr>
<td>Protein</td>
<td>9,9722%</td>
<td>19,2262%</td>
<td>61,9343%</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>2,9323%</td>
<td>4,8334%</td>
<td>1,7331%</td>
</tr>
</tbody>
</table>

Identification of glycoprotein. To ensure that the extract obtained is true glycoprotein means to show positive reactions containing proteins and carbohydrates. Therefore, the identification is done to the glycoprotein extract obtained. The identification of glycoprotein was performed by color reactions using biuret reactor for the protein test and Molisch reactor for carbohydrate test. Based on the results of the identification can be concluded that the extract is true glycoprotein because it proved to give positive reaction results contain protein and carbohydrates. The results of identification are presented in Table 4.

Table 4. The results of glycoprotein identification to extract from fresh samples of Pokea shells according to the duration of boiling

<table>
<thead>
<tr>
<th>No.</th>
<th>Type Test</th>
<th>Terms</th>
<th>Fresh</th>
<th>Boiled</th>
<th>Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minute</td>
<td>minute</td>
<td>minute</td>
</tr>
<tr>
<td>1.</td>
<td>Biuret Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Glycoprotein content. Analysis of glycoprotein content was performed to the shell meat with two different treatments to determine the effect of boiling duration to glycoprotein level in shell meat. The analysis result of glycoprotein level rendemen for pokea shell with 30 minute boiling time is 4.42 gram, while with boiling time 60 minutes of pokea shell is 2.47 gram, it showed that the shorter boiling time produces higher glycoprotein levels. This is presumably because the shorter of boiling time, a little glycoprotein bonds are disconnected from the shell meat net so that it eventually becomes soluble.

Analysis of glycoprotein amino acids. In chromatogram FTIR results of the analysis of the sample appears only 16 peaks of amino acids. Thus, on the glycoprotein from the shell analyzed only 16 amino acids can be detected. The analysis results are presented in Figure 1.

![Figure 1. Chromatogram FTIR results in boiling time 30 minutes](image)

![Figure 2. Chromatogram FTIR results in boiling time 60 minutes](image)

The amino acids contained in both glycoprotein samples can be seen in Table 5.

<table>
<thead>
<tr>
<th>Amino Acids</th>
<th>Wavelength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cys</td>
<td>1716-1788</td>
</tr>
<tr>
<td>Glu</td>
<td>1712-1788</td>
</tr>
<tr>
<td>Asn</td>
<td>1677-1678</td>
</tr>
<tr>
<td>Arg</td>
<td>1672-1673</td>
</tr>
</tbody>
</table>
For quantitative calculations, it is done by comparing the peak area of each amino acid produced from the sample with that produced from the standard FTIR. The results showed that the boiling amino acid level for 30 minutes was higher than the boiling result for 60 minutes, but the content increase is not linear because there are 3 times, 2 times, and even the level is almost the same between the two boiling time. The differences may be caused by: (1) amino acid damage during the extraction process (boiling) at a temperature of 90-100 °C; (2) the use of centrifuges at 12,000 rpm makes the protein structure damaged. To determine the presence/absence of significant differences between the amino acid level produced by boiling for 30 minutes and 60 minutes of each shell meat, then a statistical analysis was performed using the t-test. The t-test results generally showed t-count > t-tables, and fewer t-counts that are smaller than t-tables. This shows a significant difference between the amount of amino acids produced by boiling for 30 minutes and 60 minutes.

The results showed that the amount of amino acid produced at boiling for 30 minutes was more than boiling for 60 minutes. Thus the isolation of glycoprotein by boiling time for 30 minutes was better variety than boiling for 60 minutes, and the results showed a significant difference.

Conclusion
The extract of glycoprotein from pokea shell meat made for 30 minutes resulted in more glycoprotein content than for 60 minutes. The extract of glycoprotein from pokea shell meat made for 30 minutes resulted in more amino acid variety than for 60 minutes.

Acknowledgment
Acknowledgements are submitted to the Directorate General of Research and Community Service Kemenristekdikti who have funded this research, and then IPB Integrated Chemistry Laboratory and IPB Technology of Fishery Products Laboratory as a place of research and sample testing. We also express our greatest gratitude to the organizing committee of International Seminar on Global Health (ISGH) 2017 STIKES Jenderal Achmad Yani Cimahi, who has receive and publish this journal article.

References


Behavioral Changes of Vegetables and Fruit Consumption of Pre School Children through Educative Snake and Ladder Game at RA Baiturrahman Village of Cipedes Subdistrict of Tasikmalaya City

1 Asep Mulyana*, 2Budiman, 3Nunung Nurjanah  
Stikes Jenderal Achmad Yani Cimahi  
*Email: asmul01@yahoo.com

Abstract

Vegetables and fruit consumption on children is still low, the national average, behavior of less vegetables and fruit consumption of pre-school children is 93.5%. This is followed by the pattern of infectious disease to degenerative and metabolic disease. The effort to improve the consumption of vegetables and fruits is a snake and ladder game. This study aim to determine the behavior (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children through educative snake and ladder game. Research design was quasi-experimental with pre-post test control group design. Samples are preschool children with stratified random sampling technique, the number of sample are 40 children. The instrument used is the observation format. Data analysis used wilcoxon test, paired sample t test and independent sample t test. The result shows there is difference in behavior of pre-school children before and after intervention with p value 0.001, and there is difference of behavior after given intervention in intervention group and control group with p value 0.001. It is expected that health service institutions can improve children’s behavior in consuming vegetables and fruit through health education to every pre-school age children that oriented on behavior change with the concept playing by learning.

Keyword: the vegetables and fruit consumption, snake and ladder game,

Introduction

Successful development of nations cannot be separated by the qualified Human Resources (HR), so that nutrition and health have a very big role in shaping healthy, intelligent and productive human. Healthy children are children who can grow and develop well and regularly. Nutrition and health status of children is affected by infectious disease, parenting, economy, mother’s knowledge, food presentation, food availability and child’s diet in which one of them includes consumption of vegetables and fruits (Adisasmito, 2013).

The phenomenon of vegetables and fruits in Indonesia is still low the situation is followed by a shifting pattern of infectious diseases into degenerative and metabolic diseases. Individual food consumption survey conducted in 2014 shows that only about 15% of Indonesians consume more than five serving of vegetables and fruits every day. Thus about 85% of Indonesians consume less vegetables and fruit or in other words that has been no compliance in fiber sufficiency in the population of Indonesia. This very ironic, because as a tropical country Indonesia is source a various vitamins, minerals, dietary fiber, and various compounds fitokimia (Indonesia ministry of health, 2014).

There has been a lot of research done to see the consumption of vegetables and fruits in pre-school children. The results of Made research (2013) showed that from 184 children, only 7.1% of children who consumed fiber > 10gr / day. Average fiber consumption is 58.7% of the recommended. The sources of fiber that is often consumed are, kale, jelly, corn, and cabbage with an average consumption 3-5 times per week.

Lack of consuming vegetables and fruits in children can cause various diseases in the future. The low consumption of vegetables and fruits is associated with an increased risk of chronic diseases such as heart diseases and diabetes. Lack of consuming vegetables can adversely affect the eyes, besides, it causes anemia with symptoms such as weakness, fatigue, lethargy, lack of
concentration and laziness in children. Children will be constipated if they consume less vegetables and fruits (Yuliarti, 2008).

Pre-school aged children are the first period when children begin to interact with the wider environment and children begin to recognize snacks, so they often choose food. In this case vegetables and fruits are less favored by children, so parents have difficulty in providing a meal of vegetables and fruits. Generally pre school children do not consume vegetables because they do not like and more than half of toddlers are not accustomed to consume vegetables, besides mother has not given vegetables and fruits to their children before the age of 1—2 years old. Thus, to improve the behavior and familiarize to the children in consuming vegetables and fruits it is necessary to be given stimulus through various media to make children feel interested and do not feel forced (Gunanti, 2000).

Giving of information to children can be done by media assistance for example through educative games, because the world of children is a world of play. This is a strategy for pre-school children to know about the importance of consuming vegetables and fruits. According to Yuwanisa (2010), educative games can increase the curiosity of pre-school age children. The educative game is packed in a fun way so that nutritional messages about vegetables and fruits can be more absorbed and applied by children.

New ideas of children’s educational games through traditional methods without a computer device has its own advantage. Easy, useful, and fun games are the most important key in designing children’s games. The chosen media that easy to apply to pre-school age children is using a snake and ladder, because pre-school age children are still interested in the game. This concept refers to the concept of “Playing by Learning.” Educative snake and ladder game has advantages. Information obtained by pre-school age children is the result of a structured learning process.

Selection of the use of snake and ladder media has many advantages compared with other media because the snake and ladder game bring the interesting image and colorful media to children, snake and ladder game can be done repeatedly, so it is not only educated but also fun for children. Snake and ladder game media can be used in teaching and learning activities because this activity is fun, so the children are interested to play while learning.

The results of preliminary studies of early childhood education (PAUD) is RA Baiturrahman. Interviews conducted on 10 children about the behavior of vegetables and fruits consumption obtained information that in general, children do not like to consume vegetables because the taste is not delicious, from the results of the interview also obtained a description of children consuming carrot vegetables in the diet such as soup or mixed with food others, children say rarely consume nuts, cabbage, spinach and others.

According to interviews with parents the children were informed that during the time at home, parents have provided vegetables and fruits menu but children still rarely consume a variety of vegetables, the respondents mentioned in one week is not stabilized consuming vegetables. As for the consumption of fruits, children generally like a variety of fruits, children generally like a variety of fruits because it tastes good. Fruits commonly consumed by majority children are watermelon, melon, apple, mango, star fruit and orange.

The role of nurse as a health educator in accordance to the role of nurse in the theory of Health Promotion Model (HPM) developed by Nola J. Pender. In this model it is mentioned that the goal of HPM is the existence of behavioral guidance, including social cognitive theory based on the model of human motivation expectation value. According to the theory of hope, healthy behavior is rational and economical. Thus, the application of HPM theory is based on the theory that Individuals will not do anything useless and unworthy of action. Individuals will not engage in activities even the activity is attractive to him if it is not possible to do to the activity.

**Method**

The research design used was *Quasi-Experimental* with pre-post test control group design. The population in this study were students of RA Baiturrahman Cipedes Sub-district, Tasikmalaya City, which were 60 people spread in 2 classes consisting of 38 students of RA B 1 and RA B 2 22 students. Sampling technique in this study using stratified random sampling. Meaning that each population has the same opportunity to be sampled the sample size in this study were 20 sample of intervention, and 20 control sample so that the total sample was 40 people. Instrument of data collection of this research us to use observation in the form of filling sheet to reconcile the consumption behavior of vegetables and fruits before and after treatment. In addition, the data collection tool used is the game media snake ladder as a medium for intervention. In this study
researchers observed the behavior in consuming the amount of vegetables and fruits in pre-school age children that have been provided. Test to analyze the results of paired observations of two data whether different or unusable. T test for normally distributed data and Wilcoxon test for abnormally distributed data.

**Results**

Table 1. Behavioral (Psychomotor Aspects) of vegetables and fruits consumption in pre-school children before given educative snake and ladder games in the intervention and control group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Pre</td>
<td>1</td>
<td>7</td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Control Pre</td>
<td>1</td>
<td>4</td>
<td>2.1</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Table 2. Behavioral (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children after being given educative snake ladder game on intervention and control group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Pre</td>
<td>3</td>
<td>8</td>
<td>5.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Control Post</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 3. Behavioral differences (Psychomotor Aspects) of vegetables and fruits consumption in pre-school children before and after given educative snake ladder game on the intervention and control group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Interpretation</th>
<th>Sum</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Intervention</td>
<td>2.30</td>
<td>1.525</td>
<td>Decrease</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Pos Intervention</td>
<td>5.10</td>
<td>1.373</td>
<td>Increase</td>
<td>20</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stabil</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Differences in Control group

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test</td>
<td>2.15</td>
<td>0.813</td>
<td>20</td>
<td>0.001</td>
</tr>
<tr>
<td>Pos Test</td>
<td>3.00</td>
<td>1.076</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Behavior differences (Psychomotor Aspects) of vegetables and fruits consumption in pre-school children after being given educative snake ladder games in the intervention and control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>5.10</td>
<td>1.373</td>
<td>20</td>
<td>0.001</td>
</tr>
<tr>
<td>Control</td>
<td>3.00</td>
<td>1.075</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

Based on the results of the research, it was found that respondent behavior in the intervention group consumed at least 1 type of fruits and vegetables, consuming the most of 7 kinds of fruits and vegetables. The average consumption in the intervention group was 2.3 and the standard deviation 1.5. In the control group, at least consume 1 type of fruit and vegetables, consuming the most 4 types of fruits and vegetables. The average consumption in the intervention group was 2.1 and the standard deviation 0.8.
The low consumption of vegetables and fruits can not be separated from the role of a complex learning process. With the socialization of vegetables and fruits, preschool children are able to get stimulation to behave. Social media can be sourced from family, peers, school environment and mass media.

Based on the field discovery, the children's behavior of vegetables and fruit consumption is still low. This can be seen from the observation that generally children in the intervention and control group are still hesitant in consuming vegetables. Children taste vegetables and do not eat up 1 cup of vegetables that provided. Consumption of vegetables and fruits in the intervention and control group is still low. This can be due to internal and external factors, internal factors consisting of factors that have a positive and negative effect on the consumption of vegetables and fruits derived from knowledge and attitude. External factors represent opportunities and obstacles that affect the consumption of vegetables and fruits that come from outside or the environment.

The results showed that respondents' behavior in the intervention group after being given the ladder snake game consumed at least 3 types of fruits and vegetables, consuming the most of 8 kinds of fruits and vegetables. Looking at the data, the behavior of respondents of pre-school age children shows the frequency distribution of respondents' actions in the control group and the intervention during pre test of each group has increased. This can be seen from the final evaluation of the average consumption in the intervention group is 5.1 types of vegetables and fruits. Then in the control group consumed at least 1 type of fruit and vegetables, consuming the most 5 types of fruits and vegetables. The average consumption in the intervention group was 3.

The results of Mohammad's research (2015) found an increase in vegetable and fruit intake after one week of intervention in which vegetables and fruits were frequently consumed, that is carrots (6.4 ± 5.4 times / week), kale (5.7 ± 5.6 times / week), tomatoes (4.9 ± 5.0 times / week), long beans (4.0 ± 4.7 times / ming-gu), and cucumbers (4 ± 4.5 times / week), while at SDN Papandayan is spinach (5.7 ± 4.7 times / week), carrots (5.3 ± 4.8 times / week), kale (4.2 ± 4.6 times / week), beansprouts (3.5 ± 4.2 times / week), and long beans (3.1 ± 4 times / ming-gu).

Children who were given intervention were restored the menu of vegetables and fruit as before. From the results of the analysis, an increase in the number of vegetables and fruits consumed by children. For example there are children who before the intervention consume 1 piece of mango, but after intervention children can consume beans, spinach, mango and watermelon. Then the children who only consume bananas, but after intervention children can consume cabbage, spinach, oranges and bananas. Likewise in other children given intervention there is a significant increase in the amount of vegetables and fruits.

Another case with children in the control group, from the findings in the field of children before the intervention to consume 2 types of fruits, after a week later when the post test still consume similar fruit types. But there are children who experience increased amount of consumption, for example when the pre test of children consuming spinach and when evaluated in the post test children consume spinach and mango. Likewise in other children who are not given intervention there is an increase but not significant in consuming the amount of vegetables and fruits.

The increase in the intervention group can not be separated from the social media as a complex learning process. With socialization coupled with media that attract children. Media socialization in this research is to involve teachers and colleagues as an intermediary and help researchers to socialize consumption of vegetables and fruit. Then the socialization is supported with environmental conditions respondents are given interventions with peers in the school environment.

There are no respondents experienced a decrease in consumption of vegetables and fruits, and all of them experienced an increase in consuming vegetables and fruits, and no respondents did not experience any changes in consuming vegetables and fruits either before or after the intervention. Then another data obtained showed that in the average control group that is 2.15 types of fruits and vegetables and increased to 3 types of fruits and vegetables after intervention.

Result of statistic test with wilcoxon obtained p Value 0.001 mean there are differences of behavior (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children before and after given game of educative ladder snake in intervention group. While in the control group of statistic test results obtained p Value 0.001 (<0.05) means there are differences in behavior (Psychomotor Aspects) consumption of vegetables and fruits in pre-school children before and after the game provided educational snake and ladder game in the intervention group. But the difference is very weak because the value of correlation is 0.722.
The results of this study did not differ from the research conducted by Linda Ryan (2005) in her study found out of 168 different respondents that place of 122 from Holyoke and 46 from Haxtun found that the average consumption of the amount of fruit and vegetables in Holyoke before the intervention was 2.46 servings a day. After the intervention showed 2.90 portions resulting in an increase of 0.44 fruits and vegetables per day. Control group at Haxtun, average amount of vegetables and fruit before intervention 2.05 and after intervention 2.07 so that there was an increase of 0.02 servings per day. Increasing the number of servings in school intervention and school control did not show a significant difference of 0.05 at the level with chi-square of 1.6.

Although there are differences before and after intervention in the control group but the difference is not significant, such condition is seen from correlation coefficient including very weak category. This is based on the fact that in the control group is not given any intervention so that children do not have information or motivation to consume vegetables and fruits.

Looking at the data, the difference of vegetable and fruit consumption in pre-school children before and after the game of educative snake and ladder game in the intervention and control group can be understood. This is based on a ladder snake game conducted in the intervention group that can inspire the children's motivation to follow what is presented by the researcher and teacher. Because the intervention can draw attention to the concept of playing by learning.

There are no respondents experienced a decrease in consumption of vegetables and fruits, and all of them experienced an increase in consuming vegetables and fruits, and no respondents did not experience any changes in consuming vegetables and fruits either before or after the intervention. Then another data obtained showed that in the average control group that is 2.15 types of fruits and vegetables and increased to 3 types of fruits and vegetables after intervention.

Result of statistic test with wilcoxon obtained p Value 0.001 mean there are differences of behavior (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children before and after given game of educative ladder snake in intervention group. While in the control group of statistic test results obtained p Value 0.001 (<0.05) means there are differences in behavior (Psychomotor Aspects) consumption of vegetables and fruits in pre-school children before and after the game provided educational snake and ladder game in the intervention group. But the difference is very weak because the value of correlation is 0.722.

The results of this study did not differ from the research conducted by Linda Ryan (2005) in her study found out of 168 different respondents that place of 122 from Holyoke and 46 from Haxtun found that the average consumption of the amount of fruit and vegetables in Holyoke before the intervention was 2.46 servings a day. After the intervention showed 2.90 portions resulting in an increase of 0.44 fruits and vegetables per day. Control group at Haxtun, average amount of vegetables and fruit before intervention 2.05 and after intervention 2.07 so that there was an increase of 0.02 servings per day. Increasing the number of servings in school intervention and school control did not show a significant difference of 0.05 at the level with chi-square of 1.6.

Although there are differences before and after intervention in the control group but the difference is not significant, such condition is seen from correlation coefficient including very weak category. This is based on the fact that in the control group is not given any intervention so that children do not have information or motivation to consume vegetables and fruits.

Looking at the data, the difference of vegetable and fruit consumption in pre-school children before and after the game of educative snake and ladder game in the intervention and control group can be understood. This is based on a ladder snake game conducted in the intervention group that can inspire the children's motivation to follow what is presented by the researcher and teacher. Because the intervention can draw attention to the concept of playing by learning.

Average consumption in the intervention group 5.1 types of vegetables and fruits, while in the control group is 3 types of vegetables and fruit. According to the authors, these data indicate that there is a significant difference in post-test behavior (Psychomotor) between the intervention group and the control group. After the result of behavioral value (psychomotor aspect) of preschool children at post test in intervention group and control group then done comparison of mean of both post test value.

The result of statistical test using independent sample t test obtained p Value 0.001 (<0.05) means there are difference of behavior (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children after given educative snake and ladder game on intervention and control group in RA Baiturrahman Village of Cipedes Subdistrict of Cipedes Tasikmalaya City. This study is in line with the research of Hamdalah (2011), Siti (2014) which resulted in the influence of the action before and after the media given in the treatment group and concluded that the snake and
Ladder game can be an appropriate alternative as a medium in conveying information because it has better resistance in improving the knowledge of the community and very suitable if delivered to the housewife. Before the intervention, many respondents did not know whether the portion of fruits and vegetables was 5 servings, eating fruit before meals, fruits and vegetables fills longer than rice because of its fiber content. After given intervention in the form of per-game respondents increased knowledge.

The existence of the change is not separated from children awareness that they have been given information about the benefits of vegetables and fruits. Then the children become interested further to know so that the children will follow the snake and ladder game. The next step to evaluate or assess, for example the ability to recognize the type of vegetables, fruit, or see others who consume them. Then the children begins to try to consume vegetables and fruits, and the last stage is the children can adopt where at this stage the children have received that the information in the form of consumption of vegetables and fruits provide benefits for themselves so they consume routinely.

Conclusion
There are difference of behavior (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children before and after given educative snake ladder game on intervention and control group in RA Baiturrahman Cipedes Tasikmalaya with p Value 0.001. There are behavior differences (Psychomotor Aspect) of vegetables and fruits consumption in pre-school children after given educative snake and ladder game on intervention and control group in RA Baiturrahman Cipedes Tasikmalaya with p Value 0.001.

References
Mette Rasmussen. 2006. Determinants of fruit and vegetable consumption among children and adolescents: a review of the literature. Part I: quantitative studies
The Relationship of Previous Tuberculosis Treatment and HIV Status with Multidrug-Resistant Tuberculosis

Dyan Kunthi Nugrahaeni *, Salma Zaqiya
Public Health Study Program, School of Health Sciences Jenderal Achmad Yani
Email: dyankunthi@yahoo.co.id

Abstract
Multidrug-resistant tuberculosis (MDR-TB) becoming major public health issues in the world, that cause tuberculosis (TB) cases could not be cured. One reason is the low quality of Directly Observed Treatment Short-course (DOTS) implementation through assessment history of previous TB treatment and increased co-infection of TB-HIV. This study was aimed to identify the relationship between history of previous TB treatment and HIV with MDR-TB at the Rotinsulu Lung Hospital Bandung. The research design used case control study. Sample in this research were patient with multidrug-resistant tuberculosis and drugs sensitive tuberculosis. Used secondary data obtained from patient records and laboratory results in Rotinsulu Lung Hospital Bandung. Data were analyzed using Chi-square test. The Result of this study showed that the history of previous TB treatment is significantly correlated to MDR-TB (p= 0.0001 and OR= 18.889, 95% CI: 4.093-87.172) and HIV status (p= 0.022). This finding suggest that HIV testing should be performed to every patient's with TB and MDR-TB, increase collaboration TB and HIV/AIDS programmes between the hospital with other health care facilities that implement DOTS. Drugs sensitivity testing should be performed at the start of TB treatment for patient's with previous TB treatment and TB-HIV co infection.

Key words : history of previous TB treatment, HIV/AIDS MDR-TB,

Introduction
Tuberculosis disease (TB) is contagious infectious disease caused by bacteria Mycobacterium tuberculosis. In 2015, World Health Organization (WHO) an estimated 10.4 million new incident TB cases worldwide. People living with HIV accounted for 1.2 million (11%) of all new TB cases. WHO estimated 1.4 million deaths related to TB, and addition 0.4 million deaths from TB disease among people living with HIV (WHO, 2016a). Indonesia is recorded as the second largest in the world TB after India (WHO, 2016a). The estimate number of TB patients in Indonesia is 10% of the total number of TB patients in the world, but many cases of uncured TB resulting new problem of Multidrug-resistant TB (MDR-TB) (Kementerian kesehatan, 2011).

MDR-TB is a bacterial resistance of Mycobacterium tuberculosis to at least two first-line anti-tuberculosis drugs, especially rifampicin and isoniazid (INH) (WHO, 2016b).

The incidence of MDR-TB in 2015 amounted to 3.9% of new cases, estimated 580,000 cases and 21% from previously treated TB cases (WHO, 2016b). The number of MDR-TB in Indonesia is about 2.8% of new patients and 16% of TB cases that have been previously treated (WHO, 2015). Main causes of MDR-TB in Indonesia are caused by poor implementation DOTS program (Directly Observed Treatment Short-course) in hospitals and health care facilities, increased co-infection of TB-HIV, poor surveillance systems, and the handling of cases of drug-resistant TB is inadequate (Kementerian Kesehatan RI, 2013).

The assessment results of DOTS implementation in 50 hospitals in Java 2007 showed that TB patients with drop out (default) is still high, that is as much as 10-20% in TB patients category 1 and 6 – 29% TB patient category 2. The average success of treatment in the hospital is lower, as much as 60%, while the target cure rate treatment TB is 85% (Burhan, 2010). The cure rate in TB patients who received treatment with anti-tuberculosis drugs category 2 are lower, as much as 6.5%, therefore, more than 90% of TB patients who received anti-tuberculosis drugs category 2 in hospitals are at risk for being suspected MDR TB (Kementerian kesehatan, 2011).
Inadequate treatment TB causes gene mutation in bacteria, it can cause resistance anti-tuberculosis drugs such as isoniazid and rifampicin. In mycobacteria, the influx of toxic compounds is significantly restricted by the complex cell wall and lipid bilayer presents a significant barrier to the influx of antibiotics. Decreased intracellular concentrations of more than one antibiotic may lead increased resistance to multiple drugs antituberculosis (Louw et al., 2009).

MDR-TB can be either primary or secondary resistance, primary resistance is the resistance that occurs in patients who have never received previously treatment. Primary resistance is usually on positive patients with Human Immunodeficiency Virus (HIV) infection. Secondary resistance is obtained during therapy in people who previously sensitive to drug (Syahrini, 2008), (Sharma and Mohan, 2004). Increased TB-HIV co-infection affects the progression of the disease and prolonging the period of infection, it can be increased risk of MDR-TB (Soepandi, 2012), because immune system in people living with HIV/AIDS is getting weaker (Sharma and Mohan, 2004).

TB resistance data at Bandung Lung Rotinsulu Hospital in 2005 found that 28.2% were resistant to rifampicin-isoniazid; 17.8% resistant to rifampicin-isoniazid-ethambutol; and 13.8% resistant to rifampicin-isoniazid-ethambutol-pyrazinamide-streptomycin (Andra, 2007). While in 2010 obtained data that as much as 80.8% were categorized as MDR-TB and the remaining 19.2% as XDR-TB (Nugrahaeni and Malik, 2013). The purpose of the research is to know the relationship between history of previous TB treatment and HIV/AIDS with MDR TB in Rotinsulu Lung Hospital Bandung.

Method

The research design used case control study. Sample cases in this research are patients with Multidrug-resistant Tuberculosis (MDR-TB) as much as 23 people, while the sample control are who have drugs-sensitive tuberculosis as much as 23 people in Rotinsulu Lung Hospital.

Data collection used medical records patient with multidrug-resistant tuberculosis and drugs sensitive tuberculosis from January to December 2014 in Rotinsulu Lung Hospital. Inclusion criteria of sample cases are patient MDR-TB who have complete demographic data such as: age (from 15 to 65 years old), gender, jobs and level of education, patient of MDR-TB based on clinical diagnosis, bacterial culture and resistant antituberculosis drugs test. While sample control are patient TB based on acid fast bacilli and chest X-ray test. Patient with pregnancy, diabetes mellitus, and cancer were exclude in this research.

Variable used in this research is patient’s characteristic, history of previous TB treatment, type of resistant antituberculosis drugs, and HIV/AIDS status. Univariate analysis conducted to obtain frequencies distribution variable, while bivariate analysis using Chi-square test. Ethical clearance was obtained from the Health Research Ethics Committee, Faculty of Medicine, Universitas Padjadjaran Bandung 418/UN6.C1.3.2/KEPK/PN/2015.

Result

Multidrug-resistant tuberculosis (MDR-TB) patient’s were determined on the basis of clinical diagnosis, bacterial culture from sputum and resistant antituberculosis drugs test as sample cases, while sample control are patient’s TB who had drug-sensitive TB based on acid fast bacilli and chest X-ray test. Distribution of characteristic sample with multidrug-resistant tuberculosis and drug-sensitive TB showed in table 1.

Table 1. Frequency distribution of characteristic sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multidrug-resistant TB</th>
<th>Drug-sensitive TB</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (23)</td>
<td>%</td>
<td>n (23)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-44 year</td>
<td>17</td>
<td>73.9</td>
<td>17</td>
</tr>
<tr>
<td>45-65 year</td>
<td>6</td>
<td>26.0</td>
<td>6</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>52.2</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>47.8</td>
<td>11</td>
</tr>
</tbody>
</table>
Distribution characteristic or demographic patient’s MDR-TB obtained data that the most MDR-TB mostly in the age group 15-44 years olds as much as 73.9%, occur in male as much as 52.2%, mostly have a job as a housewife as much as 39.1% and most of MDR-TB patient’s have the final education are elementary education as much as 65.2%.

MDR-TB patient’s has been resistance four (4) potentially antituberculosis drugs (rifampicin, isoniazid, ethambutol, and streptomysin) as much as 39.1%. The occurrence resistance the combination 4 antituberculosis drugs in this study has been increased compared to previous study in Rotinsulu Lung Hospital 2010 which amounted to 15.4% (Nugrahaeni and Malik, 2013).

TB patient’s who had received TB treatment previously were diagnosed with MDR-TB as much as 87%. TB treatment previously were significantly with MDR-TB (p value= 0.0001), Odds Ratio (OR)= 18.889 (95%CI: 4.093-87.172) (table 2). This research consistent with the results of the study in Belarus, Russia (2010-2011), that the majority of MDR-TB patient’s as much as 75.6% have a history of previous TB treatment. History of previous treatment for TB was the strongest independent risk factor for MDR-TB (OR: 6.5; 95%CI: 5.2 – 8.2) (Alena Skrahina, 2012).
Table 2. The Relationship history of previous TB treatment and HIV status with the occurrence MDR TB

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multidrug-resistant TB</th>
<th>Drug-sensitive TB</th>
<th>Total</th>
<th>p value</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Previous TB Treatment</td>
<td>n (23)</td>
<td>%</td>
<td></td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Previously treated case</td>
<td>20</td>
<td>87</td>
<td>6</td>
<td>26,1</td>
<td>0,0001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26</td>
<td>56,5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18,9 (4,093-87,172)</td>
</tr>
<tr>
<td>New case</td>
<td>3</td>
<td>13</td>
<td>17</td>
<td>73,9</td>
<td>43,5</td>
</tr>
<tr>
<td>HIV status</td>
<td>Positive</td>
<td>0</td>
<td>0</td>
<td>26,1</td>
<td>13,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>43,5</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>23</td>
<td>100</td>
<td>73,9</td>
<td>87,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>100</td>
<td>23</td>
<td>100</td>
<td>46</td>
</tr>
</tbody>
</table>

HIV infection in respondents who suffered from drug-sensitive TB was 26.1%, in this research found an association between HIV infection with drugs-sensitive tuberculosis (p value = 0.022). Based on research Faustini, Hall, and Perucci (2005) in Europe with 29 systematic review paper, it was found that HIV status was significantly associated with MDR-TB (OR = 3.52; 95% CI 2.48-5.01). Research in Belarus, Russia, found that HIV co-infection with TB as a higher risk factor for MDR-TB (p value: 0.0001; OR = 2.6, 95% CI: 1.7-4.1).

Discussion

Tuberculosis control and eradication strategies are constrained by MDR-TB, it can be caused complexities in diagnosis and treatment failure of tuberculosis, leading to increased mortality rate in MDR-TB (Suchindran, Brouwer and Van Rie, 2009). Multidrug-resistant tuberculosis is a tuberculosis infection caused by Mycobacterium tuberculosis that are resistant to treatment with at least two of the most potentially first-line antituberculosis drug such as isoniazid and rifampicin (WHO, 2010). In this study founded that TB patient’s who have been resistant to isoniazid and rifampicin as mush as 26.1%.

MDR-TB was caused by inadequate TB treatment such as, monotherapy drugs, noncompliance with treatment, extreme poverty, intolerance to medication, shortage of medication (Barroso, Mota and Morais, 2003), these conditions may develop resistance to antituberculosis drugs (acquired MDR-TB or direct transmission of of patients suffering from MDR (primary MDR-TB) (Suchindran, Brouwer and Van Rie, 2009).

Previous treatment can be caused Multidrug-resistant tuberculosis, in this research founded that among all MDR-TB patients who have received previous treatment with antituberculosis drug as mush as 39.1% has been considered as a treatment relaps (a patient previously treated for TB who had been declared cured or treatment completed, and re-diagnosed with bacteriologically positive tuberculosis) (WHO, 2010) and 34.8% as treatment default (interruption of treatment for ≥2 consecutive months) (WHO, 2010). Treatment default can be cause inadequate tuberculosis treatment, so that M. tuberculosis will mutate into bacteria that are resistant with antituberculosis drugs (Soepandi, 2010).

MDR-TB patient who has never had a history of previous TB treatment (new cases tuberculosis) as much as 13.0%. in this study it is unknown whether this patient’s ever had a prior history of contact with MDR TB patient’s or referred to as primary MDR-TB. People with MDR-TB among new cases indicates transmission of resistant strains of M. tuberculosis in the community (Alena Skrahina, 2012). The high number of people with MDR-TB among new TB cases indicates transmission of resistant strains of M. tuberculosis in the community (Alena Skrahina, 2012). In this study, the extent of transmission of resistant strains could not be assessed in the present study, further studies based on genotyping should be conducted. The prevalence of MDR-TB has been estimated to be up to 10 times higher occurring in unsuccessful treatment (Faustini, 2006), in this research was founded that the patient’s tuberculosis have previously treated case was at risk 18.9 times higher for the occurrence of MDR-TB.
The association between HIV infection and TB infection or MDR-TB can be caused multiple factor. The first factor an association with time window, whereas HIV infected patients, the progression of the disease are rapidly and that it can lead co-infection HIV-TB through community or institutional transmission (Suchindran, Brouwer and Van Rie, 2009). The association between HIV infection and MDR-TB may be confounded by risk factors such as injection drug use, socioeconomic status, and hospitalization.

The incidence and mortality rates for new AIDS-defining opportunistic infections have been shown to be higher if individuals with HIV are co-infected with TB. HIV patients should be avoid the risk factor of contracting TB or MDR-TB disease. Therefore, there is a need for collaboration between HIV and TB prevention programs, through screening tests TB and HIV patients. Infection control measures need to become a key element of global TB control.

Conclusion

Previously treatment with antituberculosis drugs must to be identify for each patient's of tuberculosis at all level health facilities because they are at increased risk of drug resistance, including MDR-TB. Although some characteristics of TB treatment such as defaulting from treatment and relapsing are well known predictors of multidrug resistance, other aspects of treatment such as the drugs used and the length of treatment need to be studied as they may contribute to improving control programmes.

Determining and recording the patient's HIV status is critical for treatment decisions as well as for monitoring trends and assessing programme performance. Equired collaboration TB and HIV/AIDS programmes betwen the hospital and that care facilities that implement DOTS, it can be to reduce the burden of HIV in people diagnosed with TB and people living with HIV. Drugs sensitivity testing should be performed at the start of TB treatment for patient's with previously treated with antituberculosis drugs and HIV-positive TB patient’s, to avoid mortality due to unrecognized drug-resistant TB, and strongly encourages the use of rapid DST in sputum smear-positive persons living with HIV.

Acknowledgments

We grateful to all those who contributed in my research, MDR-TB and drug-sensitive patient’s TB and staff at Rotinsulu Lung Hospital Bandung. We thank to lecture at Public Health Study Program, School of Health Sciences Jenderal Achmad Yani.

References


WHO (2016a) *Global Tuberculosis Report 2015*

WHO (2016b) *Tuberculosis profile 2015*. 

413
Analysis of Risk Factors Related to the Occurrence of Pulmonary TB in Children

1Novie Elvinawaty Mauliku*, 2Rini Rahmawati
1Public Health Study Program, School of Health Sciences Jenderal Achmad Yani
*Email: noviemauliku@gmail.com

Abstract
The proportion of pulmonary TB among all cases, children treated in Indonesia from 2007 to 2013 is ranges from 7.9% to 12%. The pulmonary TB in children is potential to cause a disability even death. This study aims to determine the relationship between sex, history of contact, socioeconomic, and nutritional status with the occurrence of pulmonary TB in children. Research design using case control. Samples were 140 children who had been treated at clinic in Palabuhanratu hospital, consisted of 70 children with pulmonary TB as cases and 70 children with not TB as a control. Data were analyzed by Chi Square test and risk factor was calculated by odds ratio. The result showed a risk factor for pulmonary TB is contact history (p= 0.000, OR= 6.769, 95%CI: 3.165-14.479), socioeconomic (p=0.002, OR=3.375, 95%CI: 1.629-6.993), immunization (p=0.050, OR=2.683, 95%CI: 1.079-6.670) and the nutritional status (p=0.000, OR=4.000, 95%CI: 1.889-8.468). Promotive and preventive efforts through health education, nutrition monitoring, BCG and complete treatment of adults with active TB can avoid instances of Children Pulmonary TB.

Key Words: Children; Pulmonary TB; Risk factors.

Introduction
Tuberculosis (TB) is a leading cause of death by an infectious disease that is a public health problem in the world. Since 1993, TB disease has been declared as a Global health emergency by WHO, as it is estimated that one-third of the world population is infected by Mycobacterium tuberculosis. By 2012, the incidence of new TB cases is around 8.6 million cases worldwide with the mortality through 1.3 million and 75% of TB patients occurring in developing countries. WHO estimated that are 429.730 new cases of TB in Indonesian with the mortality 62.246 cases (WHO 2014). Based on the results of TB survey, the estimated new cases of TB in Indonesia at 2012 reached 185/100.000 with the mortality 27 cases (Departemen Kesehatan Indonesia 2013).

The highest risk of TB cases is in under-threes and childhood. Children are more susceptible to Mycobacterium tuberculosis, because of the imperfect immune system, contact with adults with tuberculosis, lack of awareness of parents to vaccinate BCG in newborn and poor quality of nutrition (WHO 2007). In 2011, an estimated 490,000 TB cases occurred among children (about 6% of the all cases). Each year, 64,000 children die from TB, making it one of the top ten causes of childhood death. In 2007, WHO showed that the global burden of children (<15 years of age) accounted for 0.6%-6% of the reported cases (World Health Organization 2012). In Indonesia an incidence rate of TB amoung children is between 7.9%-12% and amoung of them with the pulmonary TB (Ministry of Health Indonesia 2011). Pulmonary TB is more commonly seen in children less than 5 years of age. Based on data pediatric clinic of Pelabuhanratu hospital, a pulmonary TB on 2012 was 351 cases, 2013 was 331 cases and 2014 is 235 cases (clinic of pediatric Pelabuhan ratu hospital 2014).

Pulmonary TB has the potential to cause various problems, such as failure to grow, disability and even death. Often children with tuberculosis are treated late to the nearest health center or hospital, usually they are taken to the hospital after experiencing severe tuberculosis and expanding even already attacking the membranes of the brain (disseminated TB and TB meningitis) (Ministry of Health Indonesia 2011). The aim of this study is to determine the relationship
between sex, history of contact, socioeconomic, and nutritional status with the occurrence of pulmonary TB in children at the clinic pediatric Palabuhanratu hospital.

Method

The research design using case control observational study. The sample of this study was 140 children who had been treated care at the pediatric clinic Palabuhanratu hospital, consisted of 70 children with pulmonary TB as cases and 70 children with not pulmonary TB as a control. Sampling technique in this study using simple random sampling for the control, with criteria: are the under five children who same age with the cases sample group. Data were analyzed by Chi Square test with significance level of 95% confidence interval (p ≤ 0.05) and risk factor was calculated by odds ratio.

Result

A total of 140 are selected as this study participant’s presentation of male: female ratio was: 74:66. Based on the analysis seventy children who had a history of pulmonary TB, 44 (62.9%) of them had contact with an adult suffering from TB. Fifty-two (74.3%) children had received BCG vaccination and 70 out of 35 (50%) were found malnourished with low social economic (Table 1).

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Category responding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cassius (%)</td>
<td>Control (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=70)</td>
<td>(n=70)</td>
</tr>
<tr>
<td>1</td>
<td>Sex</td>
<td>Male</td>
<td>39 (55.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>31 (44.3%)</td>
</tr>
<tr>
<td>2</td>
<td>Contact history</td>
<td>Contact</td>
<td>44 (62.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not contact</td>
<td>26 (37.1%)</td>
</tr>
<tr>
<td>3</td>
<td>Immunization BCG</td>
<td>Not immunization</td>
<td>18 (25.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immunization</td>
<td>52 (74.3%)</td>
</tr>
<tr>
<td>4</td>
<td>Socioeconomic</td>
<td>Low socioeconomic</td>
<td>35 (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High socioeconomic</td>
<td>35 (50%)</td>
</tr>
<tr>
<td>5</td>
<td>Nutritional status</td>
<td>Malnutrition</td>
<td>35 (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not malnutrition</td>
<td>35 (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>70 (100%)</td>
</tr>
</tbody>
</table>

Factors associated with pulmonary TB are depicted in Table 2. On statistical analysis, it was found out that contact history (p=0.000, OR= 6.769, 95% CI: 3.165-14.479), socioeconomic (p=0.002, OR=3.375, 95% CI: 1.629-6.993), immunization (p=0.050, OR=2.683, 95% CI: 1079-6,670) and the nutritional status (p=0.000, OR=4,000, 95% CI: 1,889-8,468) were associated with pulmonary TB.
### Table 2. The risk factor associated with the pulmonary TB

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>OR (95%CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sex</td>
<td>1.258 (0.65-2.45)</td>
<td>0.612</td>
</tr>
<tr>
<td>2</td>
<td>Contact history</td>
<td>6.769 (3.17-14.48)</td>
<td>0.000</td>
</tr>
<tr>
<td>3</td>
<td>Immunization BCG</td>
<td>2.683 (1.08-6.67)</td>
<td>0.050</td>
</tr>
<tr>
<td>4</td>
<td>Socioeconomic</td>
<td>3.375 (1.63-6.10)</td>
<td>0.002</td>
</tr>
<tr>
<td>5</td>
<td>Nutritional status</td>
<td>4.000 (1.889-8.468)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Discussion

The incidence of pulmonary TB based on gender in epidemiology proved there is a difference between the sexes men and women. But based on the presentation of the disease that occur in children between men and women there are no meaningful differences until at the age of puberty. And based on the results of the study showed that the incidence of pulmonary TB disease can occur in children at both sexes male and female.

Contact history was greatly influences of transmission Pulmonary TB. Tuberculosis is transmitted from an infected person to a child and a susceptible person by airborne particles (droplet nuclei). These infectious droplet nuclei are released when persons with pulmonary or laryngeal tuberculosis cough, sneeze, or laugh (Todar K n.d.). Also a family, whom a member was suspect of TB, have risk 4.9 greater infected than another contact (Trauren Besser, 2001). Similarly, the results of research Froehchich et.Al (2000) showed the relationship between the contacts history of suspect TB with a pulmonary TB in children. Contact history with adults, due the transmission of the bacteria through small droplets airborne repetitive, for example by coughing, sneezing, talking or kisses and hugs on the child, so have the opportunity 50/50 to infect children from pulmonary TB (Kuswantono,2002).

The risk of transmission of the children of adult with TB, related to the level of protection provided by families especially mothers of children. BCG immunization is administering vaccine consists of live bacilli which eliminated virulence. BCG immunization can provide the durability of the body so childhood wasn’t easily affected by Pulmonary TB disease. Based on study of WHO, BCG immunization as a protection 0-80% against *Mycobacterium tuberculosis* bacteria, but questionable BCG vaccine researchers against tuberculosis not fixed. Accordance research Briassoulis (2005), that BCG immunization cannot entirely protects children from an attack of pulmonary TB. The effectiveness of the vaccine BCG to protect most people from germs TB is at 70-80% Main (2003). The research on childhood immunization has been given BCG and apparently suffer from Pulmonary TB is likely because the children had been infected with the TB germ before given BCG immunization or the child is suffering from pulmonary TB due to other factors such as the status of the nutrition, smoking of a member in the family, or the presence of contact history.

Socio-economic status is not the direct cause of the occurrence of the disease tuberculosis, however with the socio-economic condition of lacking will to fulfillment of nutrition, handling the sufferer and attitudes to disease of pulmonary TB. Based on data from the WHO, 90% of TB sufferers occurs at the lower socioeconomic groups and mostly occur in the developing world by as much as 15-40% (World Health Organization 2013). One of the causes of the economic factor is income per capita. Per-capita income is the most important variable in the utilization of health services. 15 – 40% (World Health Organization 2013).

Nutritional status was an important determinant to an occurrence of infectious diseases (Skolimowska et al. 2012). The malnutrition is a signifanct risk factor for childhood tuberculosis. Malnutrition causes the immune system will decrease which means the bodies disable to defense against *Mycobacterium tuberculosis* (Aditama 2002).

### Conclusion

The risk factors of pulmonary TB in children are contact history, socioeconomic, immunization and the nutritional status. The identification of significant predictors can help determine the correct intervention to resolve the problem. These findings underscore the need for
more promotive and preventive efforts through health education, nutrition monitoring, BCG and complete treatment of adults with active TB can avoid instances of Children Pulmonary TB.

References


The Factors Contribute to the Health Symptom Severity of Toll Gate Workers Exposed by the Vehicle Emission

1Susiana Nugraha*, 2Dina Agustiani
1,2 Public Health Study Program, Stikes Jenderal A.Yani, Cimahi
*Email: susiana.nugraha@stikesayani.ac.id

Abstract
Transportation sector has been identified as the biggest contributor to air pollution compared to other sectors. In the big city, the contribution of motor vehicle emission reaches 60% - 70% as source of air pollution. Exposure to vehicle emission contributes to various health problems in urban area. This study was aimed to identify the impact of exposure to vehicle emissions on self-rated health symptom using Quick Environmental Exposure Sensitivity Inventory (QEESI). This study was employed 85 respondents of the toll gate workers in great Bandung area. The result of bivariate analysis showed that age and mask use significantly correlated to the symptom severity with correlation coefficient -0.253 and -0.273 (P <0.005) respectively. Whereas the younger respondents tend to have the severe health complaints compare to the older, and those who are accustomed to using the mask tend to have lesser health symptom. This finding suggests that the use of personal protective equipment might become protecting factors for adverse health problem caused by vehicle emission exposure.

Keyword : Emission, Health Symptom, Toll gate worker

Introduction
Epidemiological studies consistently indicate adverse health effects of ambient air pollution, though the relative health impact of the compounds of the pollution mixture has not yet been fully elaborated (Briggs, 2003). There is lack of information, whether fixed site levels, often used as exposure surrogates, are associated with individual exposures to outdoor air pollutants. Air pollution has been linked to current global health issues. Transportation has been identified as the major sources of air pollution. In big cities, the contribution of vehicle emission as source of air pollution reaches 60% -70%, moreover the gas emission from industrial chimneys contribute about 10%-15% while other sources of pollution comes from combustion, such as households stove, burning garbage, forest fires, and others (Kementrian Lingkungan Hidup, 2012).

For more than 2 decades, research of the impact of the air pollution to the human health revealed that respiratory diseases became the number 1 disease among 10 diseases that infect the citizens of big cities, including Jakarta. Furthermore, 46% of respiratory illnesses are associated with air pollution (including Acute Respiratory Infection, asthmatic, and eye irritation). Thirty two percent of mortality rates are predicted associated with the air pollution (cardiovascular disease, pneumonia) (Hajat et al., 2001). The long-term average concentrations of black smoke, NO2, and PM2.5 were related to mortality, and associations of black smoke and NO2 exposure with natural-cause and respiratory mortality were statistically significant. The highest relative risks associated with background air pollution and traffic variables were for respiratory mortality, though the number of deaths was smaller than for the other mortality categories (Brunekreef et al., 2009).

Although motor vehicle exhaust gases consist primarily of harmless compounds such as nitrogen, carbon dioxide and water uptake, but therein also contain other compounds with sufficient amounts which may harm the human health and environment. Pollutants which are especially present in motor vehicle exhaust gases are carbon monoxide (CO), various hydrocarbon compounds, nitrogen oxides (NOx) and sulfur (SOx), and dust particulates including lead (PB) certain fuels such as hydrocarbons and organic leads, are released into the air due to evaporation from the fuel system (Raaschou-nielsen et al., 2001).

The link between urban air pollution and the possibility of health risks has only been discussed over the past few decades. Adverse effects ranging from increased deaths due to episode smog to aesthetic and comfort disorders. Other health problems between these two extremes, such as cancer of the lungs or other organs, acute or chronic laryngeal diseases, and conditions caused by the influence of contaminants on other organs such as the nervous system. Since each individual will be exposed to many compounds simultaneously, it is often very difficult to
determine which compounds or combinations of compounds which play the most harmful effects on health. The harmful effect of motor vehicle emission on health is depending on the toxicity of each compound and how widely the community is exposed to it.

The health risks of air pollution are extremely serious. Poor air quality increases respiratory ailments like asthma and bronchitis, heightens the risk of life-threatening conditions like cancer, and burdens our health care system with substantial medical costs. Particulate matter is singlehandedly responsible for up to 30,000 premature deaths each year (Union of Concerned Scientist, 2012). Exposure to PM 2.5 has a significant effect on admission rates for a subset of respiratory diagnoses (asthma, bronchitis, chronic obstructive pulmonary disease, pneumonia, upper respiratory tract infection), with a relative risk of 1.24 (95% confidence interval, 1.05–1.45) (Buckeridge et al., 2002).

In general, the term of health hazard uses to identify the influence of contaminants that can lead to increase the risk or disease or any other medical conditions in a person or group of people. This term is not limited only to its effect on clinically proven disease, but also on the effect that may also be influenced by other factors such as age, gender, the length of exposure, and the history of diseases, etc. There is much evidence that children and elderly people are at high risk in air pollution events. Children are more susceptible to respiratory infections than adults, and their lung function is also different. The elderly fall into the category of high-risk groups because the adjustment of lung capacity and function decreases and the weakening immune defenses. Because the lung capacity of people with heart and lung disease is also low, this group is also very sensitive to air pollution. Based on their chemical properties and behavior in the environment, the impact of contaminants contained in vehicle exhaust gas is classified as follows: Pollutants which mainly interfere with the respiratory tract such as sulfur oxides, particulates, nitrogen oxides, ozone and other oxides. Another one is pollutants that cause systemic toxic effects, such as hydrocarbon, carbon monoxide and lead.

Toll gate workers are occupationally exposed to vehicle engine exhaust which is contains of numerous respiratory irritant, a complex mixture of different chemical substances, including carcinogenic compounds. Vehicle emission can expose the body of the toll gate worker through respiration (smoke, dust and gas). The vehicle emission may induce various negative effects on health, namely the central nerves and peripheral nerves, cardiovascular system, hematopoietic system, kidney, digestion, reproductive system, and are carcinogenic (Raaschou-nielsen et al., 2001). Toll Workers normally work for 8 hours each day in rotating shifts and alternate between morning and afternoon. The longer a person is exposed to vehicle emission; the likelihood of the occurrence of emission exposure to health is higher. This study aims to identify the factors that influence the emergence of health complaints due to exposure to vehicle emission among toll gate workers in Great Bandung Area.

Method
Population of this study were Toll gate workers in great Bandung area, covering Cileunyi, Padalarang, Cimahi, Buah Batu, Pasteur and Cimahi with a total of 240 employees. The sample of this study was calculated using provisions of Slovin formula with 95% confidence interval, with a total of 112 study participants. Total of 85 questionnaire satisfied statistical analysis whilst 27 of them withdrawn from analysis. A set of questionnaires consist of demographic data, personal hygiene, smoking status, the length of work per day, working period, the use of mask and health symptom checker using Quick Environmental Exposure and Sensitivity Inventory (QEESI).

Pearson correlation analysis was selected to determine factors that influence the score of health symptom among toll gate workers. The research was conducted at 6 toll gate points, including Purbaleunyi, Padalarang, Pasteur, Cileunyi, Cimahi, Buah Batu, Pasir Koj. The study was conducted from November 15th to December 20th 2016.

Results
The study was attended by 85 respondents of toll workers in 4 toll gates in Bandung area. The result of data analysis shows that age and mask usage are two factors that influence health complaint score.
Table 1: Description Characteristics of respondents

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Frequency (%)</th>
<th>SD (Min - Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>29.68</td>
<td>8.48 (20 - 56)</td>
<td></td>
</tr>
<tr>
<td>Years of service</td>
<td>6.75</td>
<td>6.52 (1 - 26)</td>
<td></td>
</tr>
<tr>
<td>Working hours</td>
<td>8.32</td>
<td>1.22 (8 - 16)</td>
<td></td>
</tr>
<tr>
<td>QEESI</td>
<td>18.7</td>
<td>12.75 (0 - 61)</td>
<td></td>
</tr>
<tr>
<td>Smoke</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41 (48.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>44 (51.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16 (18.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>69 (81.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mask Usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50 (58.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35 (41.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal hygiene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71 (83.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14 (16.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toll gate</td>
<td>70 (82.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toll officer</td>
<td>15 (17.8%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that the average age of respondents is 29.68 years, while the average of working period of 6.75 years. The respondents work for 8.32 hours per day. Based on the history of the disease 16 people said had a history of heart disease, asthma, stroke and allergies, and 48.2% smoked. While from the effort to protect them self from air pollution contamination 58.8% of respondents said that they always using mask and 83.5% of them are keep their personal hygiene by taking bath and change their clothes after work. The results of symptom severity score calculation from the Quick Environmental Exposure Sensitivity Inventory (QEESI) showed the average respondent had a score of 18.7 which means being in low symptom score.

Table 2: Distribution of Type of Health Complaint

<table>
<thead>
<tr>
<th>Health complain</th>
<th>Mean ± Deviation</th>
<th>Standard</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problems skeletal musculoskeletal</td>
<td>2.71 ± 2.18</td>
<td>0</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Respiratory tract</td>
<td>1.49 ± 1.41</td>
<td>0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>1.18 ± 1.42</td>
<td>0</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Digestive tract</td>
<td>1.99 ± 1.81</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>2.66 ± 2.03</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Mood, feelings</td>
<td>2.18 ± 1.95</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>extremity</td>
<td>1.66 ± 1.72</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td>2.15 ± 2.00</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Skin and sensing</td>
<td>1.48 ± 1.82</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Urinary tract</td>
<td>1.22 ± 1.48</td>
<td>0</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows the distribution of health complaint reported by respondents. From a score of 1 to 10, average respondents complained about mild to moderate health problems.
The result of bivariate analysis between the predictors and QEESI as dependent variable showed that age was significantly correlated with the health symptom score ($r=-0.210$) whereas the younger worker tend to have higher health complaint compare to the older. The use of mask also showed a statistically significant correlation with health symptom score, for those who are accustomed to using mask tend to have smaller health symptom score ($r=-0.232$).

**Discussion**

This study identified age and the use of mask as variable that influence the symptom severity of the toll gate worker. Those who are younger tend to have higher score of health symptom and those who keep using mask during work, tend to have smaller health symptom score. The average ages of the worker are 29 years old, with the age range from 20 to 56 years old.

Younger worker tend to have higher score of health symptom. Age is closely related to the working period and working unit because of it seniority. Interview with human resources staff, revealed that younger workers tend to work in one working unit for longer period of time. This situation will influence the length of exposure to vehicle emissions. While based on their career path, respondents who have longer working period and older ages will be dispatched to official job that mainly in office area, which may lesser vehicle emission exposure. This finding is in line with the study conducted by (Handoyo and Wispriyono, 2016), that working unit is work units affect the risk of exposure to pollutants. Another assumption is that the younger worker normally have newly exposed to environmental pollutant, therefore they tend to be more sensitive to the pollutant compare to the elder one (Jing-Shiang and Chang-Chuan, 2002; Oglesby, 2000).

This study also identified a significant relationship between mask use habits and health complaint scores. The results of this study are in line with previous studies that have successfully identified the benefits of masks in protecting workers from the risk of respiratory diseases caused by exposure to environmental pollutants. Mask is a simple protective equipment that is very instrumental in protecting respiratory system. Personal protective equipment refer to the set of safety equipment used by workers to protect all or part of its body from possible exposures of potential workplace hazards to occupational accidents and diseases. The habit of using mask is closely related to the occurrence of respiratory disorders (Buckeridge et al., 2002). The study conducted by (Onishi 2017) revealed that, mask is the most effective personal protective equipment in protecting air pollution such as dust, and vehicle emission. Study on the association of the use of respiratory protective devices with the level of vital pulmonary capacity, indicates that workers who do not always use mask are at risk for pulmonary function disorders almost 15 times greater when compared with workers who always use the mask (Katherin et al., 2015). The compulsory use of personal protective equipment (mask) by toll gate worker during working hours would help to protect the workers’ health from vehicle exhaust prevalent in the workplace environment (Wagh et al., 2006).

**Conclusion**

This study only identifies cross sectional relationship age and mask usage with the health symptom severity. This research is expected to be the initial data in identifying the effect of vehicle emission exposure with the perceived self-rated health symptom A cohort study and a
more detailed study of several risk factors that influence the emergence of health complaints on toll workers.

This study finding suggest the necessity of controlling vehicle emission and minimizing the exposure effect by using personal protective equipment such as mask. For the company to further improve the communication of information and education to employees in the prevention of the risk of occupational diseases. The company always provides masks that are easily accessed by employees. Companies can further improve the provision of automatic toll gates thereby reducing the risk of exposure to contaminants to employees.

Acknowledgement

This research is made possible by support from research grant administered by research and community services department (LPPM), Stikes Jenderal A Yani, Cimahi.

References


Effect of Size, ori Type, and cer DNA Fragment on Stability of Plasmid Carrying sod Gene

Suryanata Kesuma*, Catur Riani, Debbie Sofie Retnoningrum

1 Rajawali School of Health Sciences
2,3 School of Pharmacy, Bandung Institute of Technology
*Email: suryanatakemuma@gmail.com

Abstract

Problems that frequently occur in the production of the recombinant proteins are decrease stability of plasmid segregation and structure, resulting decrease protein production. Stability of plasmid segregation and structure affected by its structure, copy number and size of plasmid. This study aims to evaluate the effect of size, ori type, and cer fragment on stability of plasmid segregation and structure, sod gene expression, and rSOD activity. These plasmids are pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer. Stability of plasmid segregation was analyzed using replica plating, agarose gel electrophoresis for stability of plasmid structure, sod gene expression used by SDS-PAGE and rSOD activity used by zymography with natif-PAGE. The stability of the pCAD_sod_dapD_cer segregation is the best and pJexpress_sod is the most unstable. cer fragment inserted on pCAD_sod_dapD_cer was able to improve the stability of segregation, in addition, it can increase the stability of plasmid segregation by as much as 1.7-1.8 times than pCAD_sod. The stability of plasmid size is not affected by stability of plasmid segregation. rSOD protein size is stable when the stability of plasmid segregation less than 90%. The intensity of the rSOD protein bands from plasmid pCAD_sod_dapD_cer is the smallest and pBM_sod is the greatest when the stability of segregation less than 90%. In addition, the enzymatic activity of rSOD decreased when the stability of plasmid segregation is less than 90%. rSOD from pCAD_sod is the most decreases about enzymatic activity. The results show those size, ori type, and cer DNA fragment affect the stability of segregation, the intensity of the protein resulted, and rSOD activity, but not for the stability of the size on the pJexpress_sod, pBM_sod, pCAD_sod dan pCAD_sod_dapD_cer plasmids.

Key words: size plasmid, ori type, cer fragment, stability of segregation and structural plasmid
Introduction

*Escherichia coli* is a common prokaryote used in the production of recombinant proteins. Plasmids are used as expression vectors carrying recombinant protein that coding genes to be produced in host cells. The types of expression vectors vary greatly according to characteristics, size, promoter, copy number, tag system, and selection marker (Popov et al., 2015; Tabandeh et al., 2004).

One of the problems in the production of recombinant proteins is decreased the stability of segregation and structural plasmids, resulting in decreased production of recombinant protein (Kumar et al., 1991; Popov et al., 2015; Zhang et al., 1996). The instability of plasmid segregation cause plasmid curing, resulting leads to the loss of plasmids during cell division, while decreasing structural stability leads to incompatibility of the order and size of plasmid DNA. Factors that may affect the decrease in plasmid stability are structure, copy number, and size of plasmid, fermentation conditions (Jones et al., 2000; Popov et al., 2015).

Large plasmids usually carry a lot of genes, resulting transcription and translation process will be more severe, bacterial grows longer, and decrease the stability of plasmid segregation (Summers and Sherratt, 1984). High copy number of plasmid can produce large amounts of protein but decrease the stability of plasmid segregation. High copy number of plasmid make distribution of plasmid become random when cell division (Miljkovic-selimovic et al., 2009.; Wang et al, 2009).

The method to improve stability of plasmid segregation is the addition of specific recombination sites. *cer* DNA fragment inserted to the plasmids were used in this study, the mechanism in cis acting to prevent the multimer plasmid. This multimer plasmid resolution involves the recombinase proteins, Xer protein from *E. coli* (Casali and Preston, 2003).

This study aims to evaluating effect of size, type of ori, and *cer* DNA fragments on the stability of plasmids, stability of *sod* gene expression, and stability of *rSOD* (Superoxide Dismutase Recombinant) proteins activity. Plasmid *pJexpress*sod, *pBM_sod*, *pCAD_sod*, and *pCAD_sod_dapD_cer* were used in this study with its characteristic to be evaluated and derived from the Pharmaceutical Biotechnology Laboratory of Bandung Institute of Technology (Anindyajati et al., 2016; Bahar Z., 2016; Ekowati S., 2015; Santika, 2014).

Method

In this study evaluated the effect of size, type of ori, and addition of *cer* fragment to the stability of *pJexpress*sod, *pBM_sod*, *pCAD_sod*, and *pCAD_sod_dapD_cer*. These plasmids are derived from the Pharmaceutical Biotechnology Laboratory of Bandung Institute of Technology. The stability of plasmid segregation was determined by comparison of the ratio of colonies of *Escherichia coli* BL21 (DE3) harbouring plasmids on selective and nonselective *luria bertani* plate. The cut off for good stability of segregation is over 90% (Lee & Choi, 1987). The stability of plasmid structural was analyzed by observing the size of the plasmid on agarose gel. In addition, stability of *sod* gene expression was determined by comparing the intensity of rSOD protein bands expressed by each plasmid using SDS-PAGE and protein activity was determined using zymography.

Result

1. The Generation Time of *Escherichia coli* BL21 (DE3)

Before determining stability of plasmid segregation, the generation time of *E. coli* BL21 (DE3) harbouring *pJexpress*sod, *pBM_sod*, *pCAD_sod*, and *pCAD_sod_dapD_cer* were determined. The generation time of *E. coli* BL21 (DE3) was determined use *luria bertani* (LB) containing ampicillin (selective) and without ampicillin (nonselective). The generation time of
E. coli BL21 (DE3) on LB with ampicillin and without ampicillin was determined 2 times.

**Figure 1.** The growth curve of E. coli BL21 (DE3) harbouring plasmids on LB with ampicillin

Fig 1 and table 1, the generation time of E. coli BL21 (DE3) harbouring pCAD_sod is 57.8 ± 1.77 minutes, it is the longest time compared to pJexpress_sod, pBM_sod, and pCAD_sod_dapD_cer; 33.7 ± 1.11; 32.0 ± 2.09; and 40.0 ± 2.28 minutes.

**Figure 2.** The growth curve of E. coli BL21 (DE3) harbouring plasmids on LB without ampicillin

Fig 2, the generation time of E. coli BL21 (DE3) harbouring pCAD_sod_dapD_cer is 38.8 ± 1.78 minutes, the longest compared to pJexpress_sod, pBM_sod, and pCAD_sod are 33.4 ± 0.54; 31.33 ± 5.16; and 33.7 ± 1.58 minutes.
### Table 1. The generation time of *E. coli* BL21 (DE3) harbouring plasmid LB with ampicillin and without ampicillin.

<table>
<thead>
<tr>
<th>Plasmid</th>
<th>LB without ampicillin (minutes)</th>
<th>LB with ampicillin (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>E. coli</em> BL21(DE3)</td>
<td>30.4 ± 0.53</td>
<td>33.7 ± 1.11</td>
</tr>
<tr>
<td>pJexpress_sod</td>
<td>33.4 ± 0.54</td>
<td>33.7 ± 1.11</td>
</tr>
<tr>
<td>pBM_sod</td>
<td>31.3 ± 5.16</td>
<td>32.0 ± 2.09</td>
</tr>
<tr>
<td>pCAD_sod</td>
<td>33.7 ± 1.58</td>
<td>57.8 ± 1.77</td>
</tr>
<tr>
<td>pCAD_sod_dapD_cer</td>
<td>38.8 ± 1.78</td>
<td>40.0 ± 2.28</td>
</tr>
</tbody>
</table>

2. Plasmid Segregation Stability

The method for determining stability of plasmid segregation is replica plating. 250 colonies in LB plate without ampicillin is transferred to selective LB with ampicillin. The stability of plasmid segregation figure was computed using the ratio of the colony number on the LB with ampicillin plate to that on the plate LB without ampicillin plate. (Lee & Choi, 1987). The stability of plasmid segregation of pBR322 reached the 90% limit in the 50-70 generation, so it is used as a reference to determine the stability of pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer segregation. The stability of segregation of pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer are shown in the Table 2.

### Table 2. Number of generations *E. coli* BL21 (DE3) harbouring plasmids when stability of segregation less than 90%.

<table>
<thead>
<tr>
<th>Plasmid</th>
<th>Stability &gt; 90 % (generation to/number)</th>
<th>Stability &lt; 90 % (generation to/number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pJexpress_sod</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>pBM_sod</td>
<td>55</td>
<td>65</td>
</tr>
<tr>
<td>pCAD_sod</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>pCAD_sod_dapD_cer</td>
<td>75</td>
<td>85</td>
</tr>
</tbody>
</table>

The stability of plasmid segregation was determined 3 times. Plasmid segregation stability of less than 90% was shown in Table 3.

### Table 3. Percentage of stability of plasmid when decreased segregation stability.

<table>
<thead>
<tr>
<th>Plasmid</th>
<th>Stabilitas &gt; 90 % (%)</th>
<th>Stabilitas &lt; 90 % (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pJexpress_sod</td>
<td>95.2 ± 2.88</td>
<td>88.3 ± 2.41</td>
</tr>
<tr>
<td>pBM_sod</td>
<td>96.3 ± 2.83</td>
<td>89.1 ± 4.82</td>
</tr>
<tr>
<td>pCAD_sod</td>
<td>91.7 ± 3.44</td>
<td>84.4 ± 4.61</td>
</tr>
<tr>
<td>pCAD_sod_dapD_cer</td>
<td>94.8 ± 2.49</td>
<td>89.6 ± 2.62</td>
</tr>
</tbody>
</table>

In the table 2 and 3, pJexpress_sod is the lowest stability of plasmid segregation. pJexpress_sod began to decrease stability of segregation at generations of 20th to 30th, in amount of 95.2 ± 2.88% to 88.2 ± 2.4%. Plasmid pCAD_sod_dapD_cer was generated by pCAD_sod.
The stability of segregation pCAD\_sod\_dapD\_cer is the best. pCAD\_sod\_dapD\_cer began to decrease segregation stability at generations of 75\textsuperscript{th} to 85\textsuperscript{th}, in amount of 94.8 ± 2.49% to 89.6 ± 2.62%.

![Figure 3. The curve of stability of pJexpress\_sod, pBM\_sod, pCAD\_sod, pCAD\_sod\_dapD\_cer segregation. The numbers on the graph shown the generation time and percentage of stability of segregation.](image)

3. Stability of Plasmid Size

The number of generation when the stability of plasmid segregation is less than 90% were taken as much as 3 mL, and then the plasmid was isolated to determine the stability of plasmid size. pJexpress\_sod, pBM\_sod, pCAD\_sod, pCAD\_sod\_ dapD\_cer analyzed on agarose gel. Fig. 4, it showed the stability of plasmid size when the stability of plasmid segregation is less than 90% was not affected by ori type and cer fragment.

![Figure 4. The electroforegram of stability of plasmid size: a) pJexpress\_sod (4610pb); b) pBM\_sod (3169bp); c) pCAD\_sod (3176 bp); d) pCAD\_sod\_dapD\_cer (4466pb) and stability of plasmid size on segregation stability less than 90%: e) pJexpress\_sod (4610pb); f) pBM\_sod (3169 bp); g) pCAD\_sod (3176 bp); h) pCAD\_sod\_dapD\_cer (4466pb)](image)
4. Stability of Expression of sod Gene

ImageJ software was used for determination rSOD protein band intensity. In Table 4, pJexpress_sod, pBM_sod, dan pCAD_sod has increased protein band intensity when the stability of plasmid segregation less than 90%, in amount of 38.3% for pJexpress_sod, 9.60% for pBM_sod, and 49.8% for pCAD_sod. T7 promoter on pJexpress_sod and pBM_sod and pdps promoter on pCAD_sod still works well at 20th to 30th generation for pJexpress_sod plasmid, 55th to 65th generation for pBM_sod, and 46th to 50th generation for pCAD_sod. pCAD_sod_dapD_cer has decreased protein band intensity when the stability of plasmid segregation less than 90%, in amount of 8.6%, this is because rSOD from pCAD_sod_dapD_cer expressed countinuously, resulting E. coli BL21(DE3) stress response in LB medium.

![Electrophoresis Image](image)

**Figure 5.** The electrophoregram of SDS-PAGE of rSOD when stability of plasmid segregation:

- a) protein marker
- b) pJexpress_sod > 90%;
- c) pJexpress_sod <90%;
- d) pBM_sod > 90%;
- e) pBM_sod <90%;
- f) pCAD_sod > 90%;
- g) pCAD_sod <90%;
- h) pCAD_sod_dapD_cer > 90%;
- i) pCAD_sod_dapD_cer < 90%;

Fig. 5 and table 4, rSOD from pBM_sod is thicker than the rSOD protein from pJexpress_sod, pCAD_sod, and pCAD_sod_dapD_cer. It is influenced by a T7 was regulated sod gene, T7 is a strong promoter. RNA polymerase T7 can recognize powerful to T7 promoters, so transcription runs fast for protein production (Sørensen and Mortensen, 2005; Sethia, Rao and Noronha, 2014). The intensity of rSOD bands from pCAD_sod_dapD_cer is the smallest, although it has the best stability of plasmid segregation.

The size of rSOD from each plasmid was found 23.4 Kilo Dalton, its size same as written in theory. These results indicate those the size, type of ori, and DNA cer fragment not affect
the size of rSOD expressed sod gene from pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer.

### Table 4. The intensity of rSOD bands and rSOD Zimography

<table>
<thead>
<tr>
<th>plasmids</th>
<th>The intensity of the rSOD band on SDS-PAGE method during segregation stability *</th>
<th>percentage decrease (-)/ increase (+)</th>
<th>The intensity of the rSOD band on Zimography method when the stability of segregation *</th>
</tr>
</thead>
<tbody>
<tr>
<td>pJexpress_sod</td>
<td>&gt; 90% &lt; 90%</td>
<td>38,3 %</td>
<td>84.415 62.446 -26,0 %</td>
</tr>
<tr>
<td>pBM_sod</td>
<td>&gt; 90% &lt; 90%</td>
<td>9,6 %</td>
<td>67.584 49.477 -26,7</td>
</tr>
<tr>
<td>pCAD_sod</td>
<td>&gt; 90% &lt; 90%</td>
<td>49,8 %</td>
<td>57.957 28.960 -50,0%</td>
</tr>
<tr>
<td>pCAD_sod_dapD_cer</td>
<td>&gt; 90% &lt; 90%</td>
<td>-8,6 %</td>
<td>55.703 35.810 -35,7%</td>
</tr>
</tbody>
</table>

*) the area of calculation using ImageJ software

5. Enzymatic Activity of rSOD

![Image](image.png)

**Figure 6. The electroforegram native-PAGE of rSOD : rSOD marker; a) pJexpress_sod > 90%; b) pJexpress_sod < 90%; c) pBM_sod > 90%; d) pBM_sod < 90%; e) pCAD_sod > 90%; f) pCAD_sod < 90%; g) pCAD_sod_dapD_cer > 90%; h) pCAD_sod_dapD_cer < 90%;**

In Fig. 6, enzymatic activity of rSOD using zimography on native-PAGE. Fig. 6 and Table 4, the native-PAGE result is found an enzymatic activity of rSOD from each plasmid. Enzymatic activity was shown by a clear zone in the rSOD bands. When the stability of plasmid segregation is less than 90%, enzymatic activity of rSOD still active although the intensity is decrease. The decrease of enzymatic activity of rSOD occurred to rSOD from pJexpress_sod is 26%, pBM_sod is 26,7%, pCAD_sod is 50%, and pCAD_sod_dapD_cer is 35,7%. These results indicated enzymatic activity of rSOD were affected by stability of plasmid segregation.
Discussion

The generation time of *E. coli* BL21(DE3) free plasmids is faster than *E. coli* BL21(DE3) harbouring plasmids, it is because plasmids can suppress growth rate. pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer caused physiological stress for bacteria. In addition, pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer increase cell metabolism, resulting long time for cell division. The generation time of *E. coli* BL21(DE3) harbouring pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer affected by culture condition. *E. coli* BL21(DE3) harbouring pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer in LB with ampicillin has a longer generation time than without ampicillin, because LB with ampicillin is a selective medium, it can suppress growth rate (Friehs & Reardon, 1993; Summers, 1998). pCAD_sod is the longest generation time, it is because stability of structural and segregation is easily disturbed, resulting plasmid curving (Jones, Kim and Keasling, 2000; Popov et al., 2015).

pJexpress_sod which is inserted by pUC ori, a high copy number, that is 576.3 ± 91.9 copies per cell, resulting the distribution number of plasmids randomly, it can reduce stability of plasmid segregation (Summers, 1998; Wang, Jin, Yuan, Wegrzyn, et al., 2009; Anindyajati et al., 2016). pJexpress_sod is the largest size of 4416 bp (base pair) than the other, resulting the stability of segregation becomes more unstable (Summers and Sherratt, 1984). In addition, the sod gene on pJexpress_sod is regulated by a T7 strong promoter, it can increase the strength of transcription but the stability of segregation becomes reduced because cell metabolism to divide plasmids becomes impaired during cell division. Plasmid pJexpress_sod also does not have a particular DNA fragment to increase its stability of segregation (Popov et al., 2015; Summers, 1998).

The Segregation of pBM_sod is still stable up to 55th to 65th generation. Stability of pBM_sod segregation on 55th generation is 96.2 ± 2.83%, and on 65th generation is 89 ± 4.82%. Stability of pBM_sod segregation less than 90% is in the 65th generation, pBM_sod inserted pBM ori from pBR322, it is low-medium copy number, and its size is relatively smaller. Low- medium and small size of pBM_sod can maintain the stability of plasmid segregation, although the sod gene regulated by a T7 strong promoter (Summers, 1998).

The segregation of pCAD_sod is still stable up to 40th to 50th generation. Stability of pCAD_sod segregation on 40th generation is 91.7 ± 3.44 %, and on 50th generation is 84.4 ± 4.6%, it proves pMB1 ori from pBR322 is inserted into pCAD_sod can maintain the stability of plasmid segregation up to 50th generation (Summers, 1998).

pCAD_sod_dapD_cer generated by pCAD_sod, its size larger than pCAD_sod. pCAD_sod_dapD_cer is the most stable. The segregation of pCAD_sod_dapD_cer is still stable up to 75th to 85th generation. Stability of pCAD_sod_dapD_cer segregation on 75th generation is 94.8 ± 2.49%, and on 85th generation is 89.6 ± 2.62%. pBM1 ori from pBR322 and cer fragments inserted to pCAD_sod_dapD_cer can increase stability of plasmid segregation of 1.7 to 1.8 times than pCAD_sod without cer fragment. cer fragment prevent plasmid forming dimer or trimer by cis acting. This result is close to stability of plasmid segregation based on the literature, addition of cer fragment can increase stability of plasmid segregation up to the 80th to 100th generation (Sherratt et al., 1995; Stifling, et al 1988; Summers, 1998).

pCAD_sod_dapD_cer which is cultured to stability of plasmid segregation is less than 90% can make multimer plasmid, this is because of the possibility of mutations to cer fragment, resulting multimer plasmid (Stirling, Stewart and Sherratt, 1988). Culturing for a long time resulting buildup of metabolic and toxic, it can affects the metabolism of cells harbouring plasmids (Sethia et al, 2014; Yates & Smotzer, 2007). In the stationary phase, morphological and physiological changes of the cell to adapt, in this phase pdps will be on, so rSOD will be expressed. But, when rSOD from pCAD_sod_dapD_cer expressed countinously, resulting *E. coli* BL21(DE3) stress response and then rSOD will be aggregates formation in the cells (Sethia, Rao and Noronha, 2014).

In addition, the rSOD enzymatic activity of pCAD_sod_dapD_cer is greater than the rSOD of pCAD_sod without the addition of DNA cer fragment. The activity of rSOD becomes decrease when the stability of segregation of each plasmid is below 90%. The rSOD activity decrease as the segregation stability of each plasmid is below 90%. This happens because cells was cultured in a long time can make
cell metabolism become larger and chaperon proteins interfere in protein folding process. The misfolding of proteins results in the formation of an imperfect three-dimensional conformation cause decreasing its biological activity (Stirling, Stewart and Sherratt, 1988; Sethia, Rao and Noronha, 2014).

Conclusion

Stability of pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer segregation is affected by size, ori type, and cer fragment, but does not affect the stability of its size when the stability of its segregation less than 90%. cer fragment inserted pCAD_sod_dapD_cer can increase the stability of plasmid segregation by 1.7-1.8 times than pCAD_sod without cer fragment. pUC ori, a high copy number ori inserted on pJexpress_sod and its large size can decrease the stability of plasmid segregation. pBM_sod and pCAD_sod is relatively same, they inserted pMB1 ori, stability of them segregation also relatively equal.

Stability of pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer size not affected by stability of them segregation, although the stability of plasmid less than 90%. rSOD expressed by pJexpress_sod, pBM_sod, pCAD_sod, and pCAD_sod_dapD_cer has an enzymatic activity, but its decreased when the stability of plasmid than 90%.

Acknowledgment

I would like to express our gratitude to Dr. rer. nat. Catur Riani and Debbie Sofie Retnoningrum, Ph.D., and the pharmaceutical master program for all the guidances, feedbacks, criticisms, suggestions, and motivations that have been given.

This research was funded by the “Ministry of Research, Technology and Higher Education of Republik Indonesia” by “Competitive Grant” scheme on behalf of Debbie Sofie Retnoningrum, Ph.D. Thank you for the funding given so as to support the research.

References


Study Case: Nursing Services Program in Increasing Compliance to Treatment of Children that Suffering TBC in UPTD Cililin

Asep, Iin Inayah, Dwi hastuti
Cililin Public Health Centre
School of Health Sciences Jenderal Achmad Yani Cimahi

Abstract
Ministry of Health 2013, TB case of children in Indonesia, about 70,000 to 100,000 cases. The purpose of this study was to explore the role of nurses in improving adherence treatment in children suffering from tbc, using descriptive case study method by in-depth interviews on five participants in Cililin Health Unit UPTD. Data analysis using Milles and Humberman technique. Result of research with 5 participant of nurse in get 3 main theme that is. 1). Role of Health Officers in improving adherence in TB treatment programs in children (the role of health workers). 2). The Role of Parents As a PMO in improving adherence in TB treatment programs in children. 3). External and Internal Factors affect adherence to TB treatment programs in children. The conclusion of the conclusion of the theme can be concluded that the theme is interrelated and may affect compliance. External and internal factors can be modified. Suggestions Need for the development of nursing programs such as scheduled home visits and conducted by nurses.

Key words: Role of Nursing, Obedience, Children With Pulmonary TB
Introduction

Method
Desain penelitian ini menggunakan metode penelitian kualitatif yaitu suatu prosedur penelitian yang bermaksud untuk memahami fenomena tentang apa yang dialami oleh subyek penelitian, seperti perilaku, persepsi, motivasi, dan tindakan secara holistik dengan cara deskripsi dalam bentuk kata-kata dan bahasa (Moleong, 2012; Creswell, 2012). Pada penelitian ini yang diteliti adalah program pelayanan keperawatan dalam meningkatkan kepatuhan berobat pada anak dengan TBC.

Penelitian ini menggali dan mendeskripsikan lebih dalam tentang program pelayanan keperawatan dalam meningkatkan kepatuhan berobat pada anak dengan TBC dengan menggunakan metode Studi Kasus. Penelitian studi kasus merupakan strategi penelitian di mana di dalamnya peneliti menyelidiki secara cermat suatu program, peristiwa, aktivitas, proses atau sekelompok individu. Penelitian study kasus adalah pendekatan kualitatif yang penelitinya mengeksplorasi kehidupan nyata, sistem terbats kontemporer (kasus) atau berbagai kasus, melalui pengumpulan data yang detail dan mendalam yang melibatkan beragam sumber informasi atau sumber informasi majemuk (misalnya pengamatan, wawancara, audivisual dan dokumen) dan melaporkan deskripsi dan tema kasus (Creswell, 2012).


Penelitian ini dilakukan pada bulan Mei 2017 pada perawat yang menjalankan program TB/dots puskesmas. Adapun tahap kegiatan penelitian meliputi:

Prosedur pengumpulan data adalah ketentuan yang dijalani peneliti untuk mengumpulkan data yang diinginkan ketika akan penelitian. Proses pengumpulan data pada penelitian kualitatif menurut (Afandyati dan Rahmawati, 2014) terbagi menjadi :

1. Wawancara adalah percakapan dengan maksud tertentu, percakapan dilakukan oleh dua pihak, yaitu pewawancara (interviewer) yang mengajukan pertanyaan dan terwawancara (interviewee) yang memberikan jawaban atas pertanyaan itu dengan maksud untuk mencari informasi (Maleong, 2013). Pada penelitian ini wawancara yag dilakukan peneliti dengan menggunakan metode wawancara semistruktur, yaitu menggunakan pedoman wawancara sebagai acuan untuk bertanya.

2. Observasi adalah dasar semua ilmu pengetahuan, observasi merupakan data fakta menganai apa yang telah ditangkap kedalam tulisan dan bersifat nyata sesuai dengan pengamatan manusia dalam penelitian (Nasution 1988 dalam Maleong, 2013). Observasi yang dilakukan peneliti seperti mengobsevseri pelayanan, cara komunikasi perawat dalam melakukan edukasi atau konseling dan observasi pencatatan pelaporan TB.

3. Studi dokumen adalah catatan peristiwa yang telah berlalu, berupa tulisan, gambar, atau karya tulisan dari seseorang, untuk melengkapi suatu studi penelitian dan studi dokumen merupakan pelengkap dari penggunaan metode wawancara dan observasi (Maleong, 2013). Studi dokumen yang dilakukan yaitu melihat status pasien seperti TB 01, TB 02 dan TB 03.


Dalam penelitian ini, peneliti mengumpulkan data dalam penelitian studi kasus untuk menggali dan mendeskripsikan lebih dalam tentang program pelayanan keperawatan dalam meningkatkan kepatuhan berobat pada anak dengan TBC, menggunakan metode wawancara mendalam (in depth interview). In depth interview adalah bagian dari wawancara penting dalam penelitian kualitatif dimana wawancara formal dilakukan dibahas kembali dan merupakan percakapan tidak terstruktur (Robinson, 2000 dalam Rachmawati, 2007).

Peneliti dalam melakukan indept interview akan membuat pedoman wawancara sebagai dasar agar semua tujuan dari penelitian didapatkan jawaban yang sesuai dengan pertanyaan, kemudian dari jawaban partisipan akan dikembangkan oleh peneliti menjadi sebuah pertanyaan lagi. Tujuan pembuatan pedoman wawancara menurut peneliti adalah untuk menghemat waktu, pembicaraan peneliti dan partisipan tidak melebar kemana-mana keluar dari topik pembicaraan. Pedoman wawancara dibuat peneliti sendiri, yang mengacu pada tujuan penelitian, tujuan umum dan tujuan khusus. Tempat yang digunakan dalam pelaksanaan wawancara adalah tempat yang tenang dan bebas dari gangguan, namun untuk menjaga kerahasiaan dan privasi dari partisipan maka tempat dimana dilakukan wawancara nantinya ditentukan oleh partisipan. Waktu wawancara yang direncanakan peneliti sekitar 40-60 menit untuk satu partisipan.

Peneliti menyiapkan Field note catatan lapangan. Field note terdiri dari informasi tentang tanggal dan waktu, setting fisik lingkungan (posisi duduk informan), karakteristik informan (penampilan, perilaku ditempat pengambilan data), interaksi sosial dan aktivitas yang berlangsung, frekuensi dan durasi (kapan, lama, beberapa sering peristiwa berulang), dan faktor-faktor yang tidak terlihat (konotasi kata-kata dan non verbal informan). Proses penelitian ini terdiri dari beberapa tahap yaitu:

Peneliti melakukan proses dokumentasi hasil pengumpulan data segera setelah proses pengambilan data. Hal ini untuk menghindari terdapatnya kekurangan
data sehingga data segera dapat diperbaiki dan menghindari adanya hal yang terlupakan selama proses wawancara. Proses dokumentasi dilakukan dengan membuat transkrip dalam bentuk verbatim hasil wawancara dan catatan lapangan. Sebelum peneliti melakukan analisis, peneliti membaca transkrip dan catatan lapangan berulang-ulang agar mengenal dan menyelami data dengan baik.

Analisis data dengan menggunakan model Miles dan Huberman (2007) dengan langkah-langkah yang pertama adalah mereduksi data, merangkum, memilih hal-hal pokok, memfokuskan pada hal-hal yang penting untuk dicari tema, dan polanya. Langkah kedua adalah penyusunan sekumpulan informasi sehingga memberikan kemungkinan penarikan kesimpulan dan pengambilan tindakan. Langkah ketiga adalah penarikan kesimpulan. Pada langkah ini peneliti memulai mencari arit, mencatat keterangan pola-pola, penjelasan-penjelasan, alur sebab akibat, dan proposisi. Langkah – langkah analisis data setelah dilukukannya pengumpulan yaitu: Reduksi data (Data Reduction), Penyajian data (Data Display), dan Penarikan kesimpulan/verifikasi (Conclusion Drawing/verification).


Credibility dilakukan peneliti dengan mengembalikan transkrip wawancara pada setiap partisipan dan meminta partisipan untuk mencek keakuratan transkrip dengan cara memberikan tanda check (V) untuk mereka yang setuju dengan kutipan ucapan mereka dalam transkrip. Selanjutnya peneliti meminta kepada partisipan, apakah mereka akan mengubah, menambah, atau mengurangi kata kunci atau tema yang diangkat sesuai partisipan. Hasil dari rekaman dengan partisipan dalam wawancara diputar ulang dengan mendengarkan bersama-sama antara peneliti dengan partisipan. Setelah itu partisipan mengatakan sudah setuju dengan hasil wawancara dan tidak ada tambahan lagi.

Transferability, merupakan bentuk validitas eksternal yang menunjukkan derajat ketepatan sehingga hasil penelitian dapat diterapkan kepada orang lain (Maleong, 2013). Transferability peneliti lakukan pada partisipan perawat yang bekerja sebagai petugas program TB di puskesmas. Partisipan ini diberikan hasil transkrip untuk membaca dan memahami arti dan makna pengalaman perawat dalam memberikan pelayanan kesehatan pada anak dengan TB. Partisipan ini menyatakan setuju dengan hasil transkrip wawancara dengan partisipan.


peneliti membawa hasil wawancara dalam bentuk verbatim kepada pembimbing dan tutor untuk melakukan penelaahan dalam mencari tema-tema hasil wawancara. **Triangulasi** dalam pengujian kredibilitas ini diartikan sebagai pencegakan data dari berbagai sumber dengan berbagai cara dan berbagai waktu. Dengan demikian, triangulasi terdiri atas triangulasi sumber, triangulasi teknik pengumpulan data, dan waktu. Triangulasi sumber dilakukan dengan cara mencegak data yang diperoleh melalui beberapa sumber. Data yang diperoleh dari beberapa sumber tersebut dideskripsikan, dikategorikan, dan akhirnya diminta kesepakatan (member check) untuk mendapatkan kesimpulan. Triangulasi teknik dilakukan dengan cara mencegak data pada sumber yang sama dengan teknik yang berbeda. Triangulasi waktu berkaitan dengan keefektifan waktu. Data yang dikumpulkan dengan teknik wawancara di pagi hari pada saat narasumber masih segar dan belum banyak masalah akan memberikan data yang valid sehingga lebih kredibel.


Peneliti sebelum melakukan indepth interview, melakukan literature review, jurnal review dan latihan melakukan indepth interview. Peneliti sebagai instrument juga harus diverifikasi seberapa jauh peneliti kualitatif siap melakukan penelitian yang selanjutnya terjalin ke lapangan. Uji validitas peneliti sebagai instrument, dalam bentuk : 1) melakukan role play indepth interview dihadapan dewan pakar dalam hal ini pembimbing, dengan harapan peneliti akan mendapatkan feedback berupa saran dan perbaikan untuk melakukan indepth interview. 2) melakukan wawancara langsung pada perawat tetapi tidak dijadikan partisipan pada saat penelitian, hal ini dilakukan agar peneliti dapat berlatih dan mengevaluasi diri apa yang perlu disempurnakan saat melakukan indepth interview.

**Funding Research**

Tema yang teridentifikasi dalam penelitian ini berdasarkan deskripsi program pelayanan keperawatan dalam kepatuhan berobat pada anak dengan TBc dari hasil wawancara dengan menggunakan metode Miles dan Hubermen. Miles dan Huberman (1984), mengemukakan bahwa aktivitas dalam analisis data kualitatif dilakukan secara interaktif dan berlangsung secara terus menerus sampai tuntas, sehingga datanya jenjang. Ukuran kejenuhan data ditandai dengan tidak diperolehnya lagi data atau informasi baru. Aktivitas dalam analisis meliputi reduksi data (data reduction), penyajian data (data display) serta Penarikan kesimpulan dan verifikasi (conclusion drawing / verification).


1. **Peran Petugas Kesehatan Dalam Meningkatkan Kepatuhan Dalam Program Pengobatan TBc Pada Anak (Peran Petugas Kesehatan)***

Peran petugas kesehatan dalam meningkatkan kepatuhan dalam program pengobatan TBC pada anak (Peran Petugas Kesehatan). Dapat digambarkan dalam tiga sub tema yaitu: Informasi Konseling Penyuluhan (KIE), Motivasi, dan Home Visit. Masing-masing sub tema akan dijelaskan dibawah ini:
a. Pemberian Informasi Tentang TB

Informasi tentang TB dalam penelitian ini teridentifikasi dari developing meaning Informasi. Partisipan menyatakan setiap kunjungan kita kasih informasi bahwa TB bisa disembuhkan, untuk sembuh harus berobat secara rutin dan jangan berhenti sebelum dinyatakan sembuh oleh petugas kesehatan. Pernyataan ini disampaikan oleh satu partisipan, berikut kutipan pernyataan yang diungkapkan:

‘‘... setiap kunjungan itu kita kasih informasi eeuuh bahwa TB itu bisa disembuhkan kemudian untuk penyembuhannya itu harus berobat rutin jangan sampai berhenti... (P1).

b. Konseling kesehatan pada Ibu

Developing meaning ketiga adalah pemberian konseling pada ibu (PMO). Konseling tentang kesehatan dan penyakit tentang TB pada anak dapat meningkatkan pengetahuan sehingga ibu, orang tua (PMO) menyadari pentingnya pengobatan TB pada anak dan meningkatkan kepatuhannya. Pernyataan ini disampaikan oleh tiga partisipan, berikut kutipan pernyataan yang diungkapkan:

‘‘... dari awal... selalu menekankan... jadi sebelum memberikan obat itu, jadi konseling dulu... yang pertama... klo misalkan Pasien dah konseling, untuk... konseling kita menerangkan dari a sampai z... (P3)

‘‘... utamakan konselingnya, nyampe dimengerti... pasien patuuhh... (2)

c. Pemberian Penyuluhan

Developing meaning keempat adalah pemberian penyuluhan. Pemberian penyuluhan pada ibu dan orang tua sebagai PMO tentang kesehatan atau penyakit yang diderita anak dapat meningkatkan kesadaran dan kepatuhan dalam pengobatan anaknya. Penyuluhan meningkatkan pengetahuan PMO tentang pentingnya kepatuhan sehingga PMO akan berusaha untuk kontrol tepat waktu dan mengawasi anak dalam minum obat. Pernyataan ini disampaikan oleh dua partisipan, berikut kutipan pernyataan yang diungkapkan:

‘‘... paling 15 menit untuk setiap kunjungan penyuluhan ga begitu lama-lama kita yang pengenting orang tuanya dapat mengerti... (P1).

‘‘... selalu memberikan penyuluhan juga... pada ibunya, setiap ini setiap dia datang... (P4)

d. Meningkatkan Motivasi

Developing meaning kedua adalah meningkatkan motivasi dengan meningkatkan motivasi kesehatan pada PMO dapat menambah kekuatan untuk meningkatkan kepatuhan berobat pada anak. motivasi yang diberikan berupa support sistem untuk meningkatkan kontrol dan kepatuhan dalam pengobatan. Pernyataan ini disampaikan oleh satu partisipan, berikut kutipan pernyataan yang diungkapkan:

‘‘... klo mengeluh susah makan obat, anaknya... sehingga resikonya jika tidak makan obat, anak akan lebih berat... maka meningkatakan motivasinya... (P2).
e. Melakukan kunjungan rumah (home Visit)
Perawat melakukan kunjungan rumah dalam penelitian ini teridentifikasi dari developing meaning Kunjungan rumah. Perawat melakukan kunjungan rumah bertujuan untuk meningkatkan kepatuhan program pengobatan, dengan kunjungan rumah pasien di rumah atau rumah anak yang sakit, dan orang tua merasa diperhatikan secara langsung. Pernyataan ini disampaikan oleh empat partisipan, berikut kutipan pernyataan yang diungkapkan:

"'di kunjungi apa alasannya, jadii homevisi ke rumahnya apa alasanya ap1"
"'walaupun sekali kita kunjungi, gitu aja, iya home visit dilakukan (p3)
di rumah pasien saya lihat fevitasinya..kamar nya. ..sinar matahari masuk ga (p4)
'*..klo misalnya dia ga..datang ke puskesmas, baru saya kunjungan rumah (p5)

2. Peran Orang Tua Sebagai PMO Dalam Meningkatkan Kepatuhan Dalam Program Pengobatan TBC Pada Anak
Peran orang tua sebagai PMO dalam meningkatkan kepatuhan dalam program pengobatan TBC pada anak dapat digambarkan dalam dua sub tema yaitu pengawas obatnya orang tua yang mengambilnya orang tua, pmonnya sama orang tuanya. si ibunya pengen sembuh anaknya, kekawatiran orang tuanya kecemasan orang tuanya itu mempengaruhi, orang tuanya lupa mengambil obat, mereka orang tua nya, terserah pada ibu dan tergantung pada orang tuanya. Masing-masing sub tema akan dijelaskan dibawah ini:

a. Pengawas Obatnya Orang Tua
Pengawas obatnya orang tuanya dalam penelitian ini teridentifikasi dari developing meaning pengawas minum obatnya yaitu orang tua. Pengawas orang tua sebagai PMO dinyatakan oleh partisipan karena anak sangat dekat dan lebih bisa diatur oleh orang tuanya. Pernyataan ini disampaikan oleh empat partisipan, diantaranya:

"'untuk anak kalo tidak ada komplikasi ,..karena pengawas obatnya orang tua pasti euuu alhamdulilah patuh semua untuk berobat sampai tuntas,' (P1)
"'..kepatuhan mengambil obat ke puskesmas itu euuu cenderung tinggi karena yang mengambilnya orang tua '..(P2)
"'..yang penting mah kita konselingnya,..orang tuanya ..bener-bener,.klo anakkan gimana gimana tertangguh yang dewasa gitukan makanya kita kan harus lebih-lebih..menganainnya itu sama,.pmunya sama,.orang tuanya,. (P3)
"'..ya rata2 si ibunya pengen sembuh anaknya,..(P4)
'karena orang tuanya,.kekawatiran orang tuanya,,kecemasan orang tuanya,..itu mempengaruhi ke..apa minum obatnya teh lebihh,,..disiplin lebih diperhatikan,.. (P5)

b. Pengawas obat Ibu
Selanjutnya developing meaning ibunya, yang nyatakan oleh partisipan dikarenakan ibunya merupakan individu yang paling dekat dengan anak dalam kehidupan sehari-hari dalam keadaan sehat dan sakit. Pernyataan ini disampaikan oleh satu partisipan, berikut kutipan pernyataan yang diungkapkan:

"'ya rata2 si ibunya pengen sembuh anaknya,..(P4)
'..saya bilang gitu ga jadi masalah..terserah pada ibu,..yang penting utk dosis,..dalam perut kosong (P4/)

International Seminar on Global Health (ISGH) 2017
Stikes Jenderal Achmad Yani Cimahi
3. Faktor Eksernal Dan Internal Mempengaruhi Kepatuhan Dalam Program Pengobatan TB Pada Anak

Faktor eksternal dan internal yang mempengaruhi kepatuhan dalam program pengobatan TB pada anak. Dapat digambarkan dalam tiga sub tema yaitu: pendidikan, ekonomi (uang dan ongkos) dan jarak. Masing-masing sub tema akan dijelaskan dibawah ini:

a. Tingkat Pendidikan/ pengetahuan

Tingkat Pendidikan dalam penelitian ini teridentifikasi dari developing meaning Pendidikan. Partisipan menyatakan bahwa status/tingkat pendidikan dapat mempengaruhi pada tingkat kepatuhan pengobatan didasarkan pada tingginya pengetahuan pasien tentang penyakit dapat meningkatkan kesadaran tentang kesehatan. Pernyataan ini disampaikan oleh dua partisipan, berikut kutipan pernyataan yang diungkapkan:

```
'*....tergantung pada tingkat pendidikan biasanya klo misalnya pendidikanya sd,smp,kadang –kadang kita juga eeuu stepstep mana yang harus ...biasanya,...(p1)
'*....berpengaruh biasanya klo dijelasin pendidikanya agar tinggi biasanya kita cukup satu kali,...klo biasanya pendidikanya eeu wawasan kurang,...biasanya juga beberapa kali,...(p2)
```

b. Status Ekonomi.

Status ekonomi dalam penelitian ini teridentifikasi dari developing meaning uang dan ongkos. Partisipan menyatakan bahwa pasien kontrol ke puskesmas kadang nunggu punya uang dulu. Ibu datang telat ngambil obat karena uangnya ongkos. Status ekonomi dapat mempengaruhi tingkat kepatuhan dalam program pengobatan anak dengan TB. Pernyataan ini disampaikan oleh tiga partisipan, berikut kutipan pernyataan yang diungkapkan:

```
''.....untuk sementara ini ga ada klu untuk ongkos dan jarak itu mungkin karena masih terjangkau daerahnya ga begitu jauh-jauh(p1)
'*....itu cenderung menyerang ekonomi lemah,...,berhubungan dengen nutrisi dulu,kekebalan tubuh dulu,...kadang imunisasii gada lengkap,dia datang kadang nunggu uang dulu,...(p2)
'*....ibu tetlat,ngambil obat kepuskesmas atasanya ongkosnya,.(p5)
```

c. Jarak Fasilitas Kesehatan

Jarak fasilitas kesehatan dalam penelitian ini teridentifikasi dari developing meaning jarak. Partisipan menyatakan bahwa jarak dapat mempengaruhi pada tingkat kepatuhan pada program pengobatan. Jarak yang dekat tidak berpengaruh pada kepatuhan akan tetapi jarak yang jauh memungkinkan mempengaruhi kepatuhan program pengobatan. Pernyataan ini disampaikan oleh empat partisipan, berikut kutipan pernyataan yang diungkapkan:

```
'*....untuk sementara ini ga ada klu untuk ongkos dan jarak itu mungkin karena masih terjangkau daerahnya ga begitu jauh-jauh(p1)
'*....buat tidak Patuh telat mangambil obat ya .klo tidak patuh dia berhenti,...dia telat karena jarakkk,...yang jauh (p2)
'*....klo terlalu jauh dari karyamukti kesisni bisa obatnya bisa tititip di bidan desa,...tapi rata-rata ngambilnya pengen ke puskesmas aja,...mungkin klo kepakesmasan kan langsung sama petugas programnya (p3)
'*....gaau adaaua... Karena jaraknya yang masih terjangkau (p5)
```
C. Interpretasi Dan Diskusi Hasil Penelitian

Penelitian ini berfokus pada Perawat yang melaksanakan program pelayanan dalam meningkatkan kepatuhan pengobatan pada anak dengan TB, berdasarkan hasil-hasil penelitian ini teridentifikasi 3 tema, besar sebagai berikut:

1. Peran Perawat Dalam Meningkatkan Kepatuhan Dalam Program Pengobatan TBC Pada Anak

Hasil penemuan penelitian ini menghasilkan pemahaman bahwa Peran perawat dalam meningkatkan kepatuhan dalam program pengobatan TBC pada anak, Dapat digambarkan dalam tiga sub tema yaitu: Informasi Konseling Penyuluhan (KIE), Motivasi, dan Home Visit. Secara keseluruhan hasil penelitian ini, perawat mengungkapkan dalam memberikan pelayanan pada anak dengan TB perawat mempunyai peranan yang sangat kuat untuk kepatuhan pada program pengobatan TB. Peran perawat sebagai konselor/konseling kesehatan. Sebagai pemberi informasi kesehatan, peran sebagai motivator dan peran caregiver memberikan kepercayaan orang tua atau ibu (PMO) dalam meningkatkan kepatuhan dalam pengobatan TB. Peran sebagai konselor kesehatan perawat mampu untuk memberikan ilmu tentang segala hal tentang TB pada anak baik tentang penyakit TB, efek obat TB, lama pengobatan TB, jenis makanan yang baik untuk anak dengan TB dan lain sebagainya.


Penelitian yang dilakukan oleh Pandapotan, dkk (2014) dengan judul penelitiannya "Gambaran Peran Serta Petugas Kesehatan Terhadap Kepatuhan Berobat Penderita TB Paru Di Kelurahan Gambir Baru Kecamatan Kisaran Timur". Hasil penelitian ini menyimpulkan bahwa komunikasi yang baik dari perawat program TB, penyuluhan kesehatan oleh perawat, dan motivasi/dukungan yang diberikan oleh perawat dapat meningkatkan kepatuhan dalam pengobatan TB. Kepatuhan terhadap pengobatan dapat menjadi indikator terhadap kesembuhan anak dengan TB.


Hasil penelitian ini, pertisipan menyatakan sikap baik yang ditunjukkan pelayanan kesehatan terhadap partisipan dapat menjadikan support selama menjalani pengobatan anaknya. Perawat dapat membantu mengatasi permasalahan yang dihadapi ibu selama menjalani pengobatan tuberkulosis pada anak.

Penelitian Kate, Gerrish, Naisby, Andrew Dan, Mubarak (2013) Di Dalam “Experiences of the diagnosis and management of Tuberculosis” penelitian ini bertujuan Untuk mengeslporasi pengalaman diagnosis dan pengelolaan TB dari perspektif pasien Somalia dan profesional kesehatan yang terlibat dalam perawatan mereka. Perawat harus memahami bagaimana penyakit ini dialami oleh orang-orang dari latar belakang etnis yang berbeda untuk menerapkan strategi untuk pencegahan dan manajemen tuberkulosis.
Kesimpulan perawat memiliki peran dalam memberikan informasi TB yang baik, diagnosis tepat waktu, dan kepatuhan pengobatan dengan mendukung pasien meningkatkan tentang kesadaran penyakit TB, di kalangan praktisi perawatan primer.

Dalam penelitian ini peran keperawatan dalam meningkatkan kepatuhan berobat pada anak dengan TB terlihat berdasarkan pernyataan-partisipan bahwa pemberian informasi, konseling, penyuluhan dan motivasi terhadap keluarga, ibu dan anak dengan meningkatkan kepatuhan dalam program pengobatan TB pada anak. Peran perawat manjadi ujung tombak keberhasilan dalam meningkatkan kepatuhan pengobatan TB pada anak. Peran perawat dalam melakukan kunjungan rumah/home visit merupakan bagian penting dalam meningkatkan kepatuhan program pengobatan. Dengan kunjungan rumah orang tua/ ibu dari anak dengan TB merasa diperhatikan oleh perawat. Perhatian merupakan suport sistem dari perawat dalam meningkatkan kepercayaan orang tua/ibu terhadap anaknya yang sedang menderita TB. Hubungan yang baik antara perawat dan orang tua/ibu dari anak dengan TB menjadi dukungan dalam meningkatkan kepatuhan dalam program pengobatan TB. Home visit dilakukan rata-rata sebulan sekali oleh petugas perawat. Pada kunjungan ini perawat menyampaikan informasi tentang TB dan mempertanyakan perkembangan anak, keluh kelah yang terjadi pada anak bila ada.

Peneliti dapat menyampaikan pernyataan atau pendapat bahwa semua partisipan dalam penelitian ini yaitu perawat program TB. Sudah melakukan segala upaya dalam meningkatkan kepatuhan terkait program pengobatan TB pada anak dengan TB. Partisipan menyatakan bahwa mereka telah melakukan penyuluhan tentang pentingnya pengobatan TB sampai tuntas dan jangan putus di tengah jalan. Partisipan sudah memberikan konseling terkait efek obat dan cara menangani. Partisipan sudah memberikan motivasi pada ibu yang supaya tidak bosan untuk sabar dalam menanbantu anak untuk minum obat, bahkan partisipan sudah melakukan home visit pada pasien yang tidak datang untuk kontrol dan memberikan lagi penyuluhan, informasi dan motivasi untuk tetap berobat sampai sembuh. jangan sampai anak menderita MDR TB di kemudian hari.

Berdasarkan model keperawatan Teori Pender tentang model promosi kesehatan ini konsisten dan berfokus pada pentingnya promosi dan pencegahan kesehatan untuk dilakukan guna meningkatkan kesehatan klien atau masyarakat yang lebih baik dan optimal (Alligood & Tomey, 2010). Teori dan model yang dikemukakan oleh Pender adalah berfokus pada upaya promosi kesehatan dan prevensi penyakit. Sehingga teori bersifat spesifik dan sederhana, namun demikian teori ini dapat didemonstrasikan dan diaplikasikan sehingga dapat diberikan justifikasi dan pembenaran bagaimana konsep-konsep yang di kemukakan saling berhubungan. Kemampuan perawat dalam memberikan promosi kesehatan dalam betuk penyuluhan, konseling dan memberikan informasi yang bermanfaat tentang kesehatan pada pasien dalam hal ini anak dengan TB. Health Promotion Model (HMP) merupakan salah satu aplikasi didalam melakukan pencegahan dalam peran perawat yang telah dilakukan dalam penelitian ini.

2. Peran orang tua, ibu atau keluarga sebagai PMO Dalam Meningkatkan Kepatuhan Dalam Program Pengobatan TBC Pada Anak

Hasil penemuan penelitian ini menghasilkan pemahaman bahwa Peran orang tua, ibu sebagai PMO dapat meningkatkan kepatuhan dalam program pengobatan TBC pada anak. Dapat digambarkan dalam dua sub tema yaitu Peran orang tua sangat mempengaruhi terhadap kepatuhan program pengobatan dan Peran ibu, sangat mempengaruhi kepatuhan pengobatan pada anak. Secara keseluruhan hasil penelitian ini, perawat mengungkapkan peran orang dekat seperti orang tua dan ibu mempunyai andil dalam kepatuhan program pengobatan bagi anak dengan TB.
Orang tua dan ibunya merupakan individu yang paling dekat dengan anak dalam kehidupan sehari-hari dalam keadaan sehat dan sakit. Sehingga mereka mempunyai peran yang baik untuk terlibat dalam meningkatkan kepatuhan berobat pada anak, dan tujuannya yaitu kesembuhan anak tercapai dengan sempurna. Orang tua dan ibu dapat menjadi pmo yang baik dengan dukungan dan suport dari petugas kesehatan/perawat baik dalam kepatuhan kontrol dan pengobatan dengan diberikan edukasi tentang informasi kesehatan atau mengenai penyakit yang diderita anak.

Didalam penelitian silvani dan sureskiarti (2016), penelitian ini mengungkapkan bahwa peran Keluarga menunjang keberhasilan pengobatan dengan cara mengingatkan dan memberi semangat agar penderita atau anak rajin berobat dengan memberikan motivasi dan dorongan untuk sembuh. Peran aktif keluarga sebagai PMO dapat memberikan semangat kekambuhan pada pasien. Pemberian motivasi dan dukungannya langsung pada pasien oleh keluarga dapat menjadi suport bagi pasien untuk patuh terhadap program pengobatan. Peran orang tua merupakan suport sistem dalam kepatuhan karena keluarga bisa sebagai motivator, pembela, pemberi perawatan langsung di rumah terhadap anak denganTB.

Penelitian Septia, Rahmalia dan Sabrian (2015), Hasil penelitian menunjukkan bahwa dukungan keluarga berpengaruh terhadap kepatuhan pengobatan tuberkulosis. Anggota keluarga diharapkan menjadi pendukung yang mampu untuk membantu kepatuhan pengobatan pasien TB. Keluarga merupakan individu yang paling dekat dengan anak denganTB sehingga keluarga adalah yang memungkinkan untuk bisa memberikan dorongan dan motivasi dalam melakukan tindakan keperawatan baik motivasi ataupun perawatan kepada anak denganTB, dan anak mau untuk patuh pada program pengobatan TB.


Penelitian, Nabilah, Mardhiyah dan Widianti (2016), menyatakan bahwa self-efficacy yang rendah pada ibu mempengaruhi kepatuhan pada program pengobatan terhadap anak denganTB. Disini perlu kerjasama antara perawat dan ibu yang memiliki anak dengan TB. Kerjasama ini perawat harus memberikan informasi dan motivasi terhadap ibu sehingga dengan informasi dan motivasi dari perawat ibu dapat meningkatkan wawasan ibu tentang penyakit anak bertambah. Dengan bertambahnya wawasan ibu kepatuhan terhadap program pengobatan TB menjadi baik.


Di dalam penelitian ini partisipan menyatakan bahwa dalam kepatuhan terhadap program pengobatan anak denganTB peran (PMO) orang tua, ibu atau keluarga mempunyai peranan penting. Anggota
keluarga mempunyai peranan disebabkan oleh anak cenderung untuk mengikuti orang yang terdekat dan dikenal oleh anak tersebut. Kedekatan secara alamiah antara anggota keluarga dengan anak mengakibatkan adanya ikatan secara emosional dan anak menjadi menurut atau patuh terhadap ajakan atau perintah dari keluarga. Keluarga merupakan pemberi motivasi, edukasi, pembela, pembuah/merayu anak dalam minum obat sehingga keluarga harus secara terus menerus melakukan hal ini sampai anak dinyatakan sembuh dari penyakit yang di derita. Peran keluarga tidak bisa dipisahkan di dalam kepatuhan terhadap pengobatan pada anak dengan TB.


3. **Faktor internal dan eksternal yang mempengaruhi kepatuhan dalam program pengobatan TB pada anak.**

Hasil penelitian ini menghasilkan pemahaman bahwa Faktor eksternal dan internal yang mempengaruhi kepatuhan dalam program pengobatan TB pada anak. Dapat digambarkan dalam tiga sub
tema yaitu: Pendidikan, Ekonomi (Uang dan Ongkos) dan Jarak. Secara keseluruhan hasil penelitian ini, perawat mengungkapkan bahwa masih ada peran yang berpengaruh terhadap kepatuhan program pengobatan pada anak dengan TB. Faktor eksternal dan internal pada penelitian ini saling berhubungan dengan kepatuhan terhadap program pengobatan.

Penelitian James M, Kredo dan Volmink (2012), di dalam “Patient education and counselling for promoting adherence to treatment for tuberculosis, Penelitian ini menyatakan pengetahuan dari keluarga atau pasien dapat meningkatkan kepatuhan dalam program pengobatan secara signifikan. Pengetahuan mereka di dapatkan dari kegiatan edukasi atau konseling yang dilakukan oleh petugas kesehatan/perawat dalam memberikan informasi tentang penyakit TB yang sedang di derita mereka. Promosi kesehatan dalam bentuk pendidikan dan konseling sangat mempengaruhi terhadap pengetahuan pasien atau pendamping pasien dalam menerapkan kepatuhan dalam pengobatan TB. Pengetahuan seseorang dapat meningkat jika mendapatkan pendidikan kesehatan dan konseling yang diberikan oleh petugas kesehatan dan pada akhirnya pengetahuan seseorang tentang TB meningkatkan kesadaranya dan pada akhirnya mereka akan patuh pada pengobatan yang di saran kan oleh petugas kesehatan.


Penelitian Nataprawira dan Wonoputri (2014) dalam “Obstacles Facing Tuberculosis Treatment in Children from a Developing Country: a Hospital-based Study” yang dilakukan yang dilakukan dalam Penelitian ini menemukan bahwa anak-anak yang tinggal jauh dari fasilitas kesehatan untuk mendapatkan pengobatan TB dan formula obat yang berbeda adalah faktor signifikan yang mempengaruhi hilangnya pasien follow-up. Dengan demikian jarak yang jauh dapat mempengaruhi terhapat kepatuhan program pengobatan TB pada anak. geografis atau letak antara rumah penderita TB dengan sarana kesehatan dapat menjadi faktor yang mempengaruhi terhadap kepatuhan pengobatan pasien TB.

a. Faktor internal

Di dalam penelitian ini Partisipan menyatakan bahwa faktor eksternal dan internal yang ada dapat mempengaruhi terhadap kepatuhan program pengobatan pada anak dengan TB. Faktor pengetahuan dari PMO (orang tua dan ibu) dapat mempengaruhi kepatuhan program pengobatan pada anak dengan TB. Pengetahuan PMO didapat dari perawat program TB yang melakukan penyuluhan, konseling dan informasi kesehatan tentang TB. Pengetahuan yang baik dari PMO dapat meningkatkan kesadaran anak akan pentingnya kepatuhan untuk kesembuhan anak dalam massa pengobatan TB.

Menurut peneliti pengetahuan PMO mempengaruhi kepatuhan didasari oleh jika PMO mengerti dan memahami mengenai penyakit yang diderita anak itu, akan menimbulkan keinginan untuk anaknya sembuh. Proses dalam menumbuhkan pengetahuan ini bisa tercapai dengan cara aktif atau pasif. Cara aktif disini PMO mencari sendiri informasi tentang penyakit anak ke sumber-sumber yang dianggap mampu untuk memberikan penjelasan. Cara pasif yaitu dengan mendapatkan informasi dari perawat program TB melalui KIE (konseling,informasi dan edukasi) dengan berbagai kegiatan Promkes. Pengetahuan yang baik dapat meningkatkan kesadaran
akan pentingnya kesembuhan anak sehingga PMO akan selalu taat pada program pengobatan. Pengetahuan PMO sendiri ada yang mampu untuk mengaplikasikan dan ada yang kurang karena lupa. Sehingga pera edukasi perlu terus dilakukan oleh perawat.

b. Faktor eksternal

Status ekonomi keluarga dan ibu (PMO) menjadi hal yang dapat mempengaruhi kepatuhan dikarenakan keuangan/ekonomi berhubungan dengan transportasi yang dibutuhkan oleh PMO untuk mencapai puskesmas yang harus dilakukan selama 6 bulan. Paling sedikit sekitar 2 minggu sekali PMO harus membawa anaknya untuk ke puskesmas melakukan kontrol dan pemantauan yang dilakukan oleh perawat. Status ekonomi yang rendah dapat menyebabkan PMO lalai/tidak patuh untuk datang ke puskesmas, hal ini dapat menyebabkan anak tidak terpatau bahkan tidak minum obat TB. Obat TB harus di minum setiap hari tanpa putus untuk menghindari resistensi obat bahkan DO.

Jarak antara rumah PMO ke sarana kesehatan/puskesmas dapat menjadi salah satu faktor yang mempengaruhi terhadap kepatuhan program pengobatan pada anak dengan TB. Jarak atau geografis yang tidak mendukung pada dasarnya dapat di manipulasi sesuai dengan ungkapan partisifan bahwa seandainya jarak menjadi masalah dalam pengobatan TB, obat tersebut bisa di akses oleh pasien, orang tua dan ibu (PMO) ditempat Bidan desa yang tinggal di desa. Jarak pada dasarnya bisa berpengaruh atau tidak tergantung dari kecermatan petugas kesehatan atau PMO untuk memanipulasinya. Jarak yang jauh dapat di modifikasi dengan beberapa strategi yaitu obat bisa dititipkan pada bidan desa sehingga dengan demikian ibu atau keluarga dapat mengambil obat TB untuk anak di rumah bidan desa. Cara yang kedua dengan cara memberikan obat secara langsung ke ibu atau orang tua dalam jumlah 2 kali lipat dari biasanya dengan ketentuan petugas/perawat yang akan melakukan home visit ke rumah anak dengan TB.


A. Simpulan

Berdasarkan hasil penelitian dan uraian pembahasan pada bab sebelumnya, maka dapat disimpulkan bahwa program pelayanan keperawatan dalam meningkatkan kepatuhan berobat pada anak dengan TB di UPTD kesehatan cililin teridentifikasi dalam 3 tema utama, sebagai berikut:

1. Peran petugas kesehatan dalam meningkatkan kepatuhan dalam program pengobatan TBC pada anak (Peran Petugas Kesehatan). Dapat digambarkan dalam tiga sub tema yaitu: Informasi Konseling Penyuluhan (KIE), Motivasi, dan Home Visit

2. Peran orang tua sebagai PMO dalam meningkatkan kepatuhan dalam program pengobatan TBC pada anak dapat digambarkan dalam dua sub tema

3. Faktor eksternal dan internal yang mempengaruhi kepatuhan dalam program pengobatan TB pada anak. Dapat digambarkan dalam tiga sub tema yaitu: pendidikan, ekonomi (uang dan ongkos) dan jarak.
B. Saran

1. Ilmu Keperawatan Anak

Perlu adanya penelitian lebih lanjut tentang upaya – upaya perawat dalam meningkatkan perawatan anak dengan tuberkulosis dengan pendekatan kualitatif untuk mendukung pemberian pelayanan keperawatan yang berdasarkan fakta. Anak merupakan individu yang unik sehingga dalam segala aktifitasnya memerlukan pengawasan oleh ibu atau orangtua sehingga peran orang tua menjadi sentral dalam kepatuhan pada pengobatan TB pada anak.

2. Pelayanan Keperawatan Anak

Perlu adanya pengembangan program keperawatan seperti kunjungan rumah yang terjadwal. Perawat khusus anak diharapkan dapat memberikan pendidikan kesehatan dengan menggunakan media-media yang menarik sehingga dapat meningkatkan pemahaman dengan mudah dan cepat. Peran perawat sebagai pendidik, motivator dan advokasi harus lebih intensif sehingga akan meningkatkan pengetahuan, motivasi bagi PMO.

2. UPTD Kesehatan Cililin

Perlu adanya ketegasan dalam pembagian beban kerja bagi perawat pemegang program TB. Kepala UPTD di harapkan memberikan masukan kepada kepala puskesmas sehingga perawat program TB tidak merangkap tugas, perawat program hanya sebagai petugas program TB. Sehingga pelayanan terhadap pasien dengan TB bisa lebih optimal dan dapat melakukan peran keperawatan yang baik bagi pasien dengan TB

DAFTAR PUSTAKA


James M’Imunya, Kredo T, Volmink J (2012). *Patient education and counselling for promoting adherence to treatment for tuberculosis (Review)*. University of Nairobi, Nairobi, Kenya. 2South African Cochrane Centre, South African Medical Research Council, Tygerberg, South Africa


Janelle Dawn Nes, (2012). *Can the nurse through use of her encounter with the patient, helppatients with tuberculosis to avoid the negative psychological effects of isolation*”. Antall ord: 10 885.


KATE, Gerrish, NAISBY, Andrew and ISMAIL, Mubarak (2013). *Experiences of
the diagnosis and management of tuberculosis: a focused ethnography of Somalipatients and healthcare professionals in the UK. Journal of advanced nursing, 69(10), 2285-2294.


Marie carlsson dkk (2014). Tentang Nurses Roles and Experiences with Enhancing Adherence to Tuberculosis Treatment among Patients in Burundi: A Qualitative Study. Hindawi Publishing Corporation. School of Health and Medical Sciences,Orebro University Orebro, Sweden International Leadership University in Burundi.

Masoud Behzadifar, Masoud Mirzaei, Meysam Behzadifar, Abouzar Keshavarzi, Maryam, Behzadifar, Maryam Saran. (2015). Patients’ Experience of Tuberculosis Treatment Using Directly Observed Treatment, Short-Course (DOTS): A Qualitative Study, Department of Epidemiology, Faculty of Health, Yazd University of Medical Sciences, Yazd, IR Iran.


Nagarkar Aarti Kaulagekar, Deepali Dhake and Preeti Jha(2012). Perspective Of Tuberculosis Patients On Family Support And Care In Rural Maharashtra. Interdisciplinary School of Health Sciences, University of Pune, Pune.


Septia. Rahmalia & Sabrian, (2013)."Hubungan dukungan keluarga dengan kepatuhan minum obat pada penderita TB Paru”. JOM PSIK.


Undang – Undang Republik Indonesia No 38. 2014. Tentang Keperawatan.
