PROCEEDING BOOK

THE 4th INTERNATIONAL CONFERENCE ON HEALTH SCIENCE 2017

“The Optimalization of Adolescent Health in The Era of SDGs”

INNA GARUDA HOTEL YOGYAKARTA, INDONESIA
November 5th, 2017
PROCEEDING BOOK

THE 4th INTERNATIONAL CONFERENCE ON HEALTH SCIENCE 2017

“The Optimalization of Adolescent Health in The Era of SDGs”

INNA GARUDA HOTEL YOGYAKARTA, INDONESIA
November 5th, 2017

Copyright is protected by Copyright Law year 1987
No part of publication may be reproduced in any methods without written permission of the publisher


Published by
Health Polytechnic of Ministry of Health in Yogyakarta 2017
## Table of Contents

Page Address from The Chairman of The Conference ........................................................ viii  
Address from Director of Health Polytechnic of Health Ministry Yogyakarta ........................... ix  
The 4th International Conference On Health Science 2017 Committee ............................... x  
List of Keynote Speaker ........................................................................................................ xvi  
List of Oral Presentation ......................................................................................................... xvii  
List of Poster Presentation ..................................................................................................... xix  
Abstract of Keynote Speakers ................................................................................................. 1  
Full text of Oral Presentation ................................................................................................. 10  
Full text of Poster presentation .............................................................................................. 142  

## Keynote Speaker

<table>
<thead>
<tr>
<th>Keynote Speaker</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-01 Role of Regional Head in Order to Successful Community Movement</td>
<td>1</td>
</tr>
<tr>
<td>Health Living on Adolescent</td>
<td></td>
</tr>
<tr>
<td>Dra. Hj. Sri Muslimatun, M.Kes (Indonesia)</td>
<td></td>
</tr>
<tr>
<td>I-02 Health Ministry’s Policy to Improve Adolescent Health in The Era of SDGs</td>
<td>2</td>
</tr>
<tr>
<td>drg. Usman Sumantri, M.Sc (Indonesia)</td>
<td></td>
</tr>
<tr>
<td>I-03 Climate Change and The Health Consequences in The Population</td>
<td>3</td>
</tr>
<tr>
<td>Prof. Dr. Tengku Mohammad Ariff R. Husein (Malaysia)</td>
<td></td>
</tr>
<tr>
<td>I-04 Overview for The Policy and Support of Government of Thailand</td>
<td>4</td>
</tr>
<tr>
<td>Prof Assoc. Prof. Patcharee Jearanaikoon, PhD (Thailand)</td>
<td></td>
</tr>
<tr>
<td>I-05 HIV Testing in Laboratory and Community to Detect Carrier Among Adolescence Immediately</td>
<td>5</td>
</tr>
<tr>
<td>Assistant Prof. Amonrat Jumnainsong, PhD (Thailand)</td>
<td></td>
</tr>
<tr>
<td>I-06 Mental Health Detection in Teenagers</td>
<td>6</td>
</tr>
<tr>
<td>I-07 Youth Marriage on Reproductive Health</td>
<td>7</td>
</tr>
<tr>
<td>Dr. Yuni Kusmiyati, SST.,MPH (Indonesia)</td>
<td></td>
</tr>
<tr>
<td>I-08 Hormonal Changes in Tissue Periodontium in Adolescents</td>
<td>8</td>
</tr>
<tr>
<td>Dr. drg. Dahlia Herawati, SU.,Sp.Perio (K) (Indonesia)</td>
<td></td>
</tr>
<tr>
<td>I-09 Improving Child Nutrition Literacy For Teenage Pregnant Women And Its Implication To The First 1000 Days Of Child Life: Arguments For Developing Social Media Based Adolescent Support Group In Indonesia</td>
<td>9</td>
</tr>
<tr>
<td>Dr Dr. Mubasyisyr Hasan Basri, MA (Indonesia)</td>
<td></td>
</tr>
</tbody>
</table>
Oral Presentation

O-01 Identifying the Role of Hemoglobin in Intradialytic Nausea and Vomiting in Panembahan Senopati General Hospital in Bantul
Cornelia D.Y Nekada, Eva Ernawati, Tia Amestiasih (Indonesia) ......................................... 10

O-02 The Influence Of Early Breastfeeding Initiation On Postpartum Mother’s Breast Milk Production In Lismarini Independent Midwifery Practice Palembang
Indah Rahmadaniah, Lusi Meliani (Indonesia) ................................................................. 18

O-03 Maternal Characteristics and Low Birth Weight
Tri Budi Winarsih, Hesty Widyasih, Margono (Indonesia) ................................................. 22

O-04 Relationship of Obesity Early Pregnancy With Preeclampsia In RSUD Sleman 2016
Della Eprilian Sari, Dyah Noviawati Setya, Margono (Indonesia) ......................................... 30

O-05 The Effectiveness of Nipple Stimulation By Providing Supplementary Food to Successfull Breastfeeding Back (Relactation) To The Breastfeeding Mothers In Southern Tangerang 2016
Isoni Astuti (Indonesia) ........................................................................................................ 35

O-06 Factors Related to Breast Cancer Among Women in Yogyakarta City Public Hospital, Indonesia
Tia Arsittasari, Dwiana Estiwidani, Nanik Setiyawati (Indonesia) ........................................... 43

O-07 The Effectiveness of Health Education Through Smartphone and Booklet on Knowledge and Attitude of Adolescence Reproductive Health
Puspa Sari, Kusnandi Rusmil, Arief S. Kartasasmita, Farid, Tati Latifah Erawati Rajab, Deni K. Sunjaya, Tina Dewi Judistiani (Indonesia) ....................................................... 51

O-08 Physical Activities and Snack Consumptions of Obese Adolescents In Bantul, Yogyakarta
Mellia Silvy Irdianty (Indonesia) .......................................................................................... 60

O-09 The Correlation Education About Health Reproductive and Knowledge and Attitude of Health Reproductive of Adolescent
Kusbaryanto , Hatasari (Indonesia) ....................................................................................... 68

O-10 The Relationship Between Knowledge, Attitudes, Actions Related to The Clean and Healthy Behavior and Nutritional Status with Diarrhea Events In Islamic Boarding School
Sinta Mukti Permatasari, Ayu Rahadiyanti, Fathimahi (Indonesia) ....................................... 74

O-11 Factors Associated with Exclusive Breastfeeding among Working Mothers in Yogyakarta City, Indonesia
Sri Yunita, Munica Rita Hernayanti, NikenMeilani (Indonesia) .............................................. 79

O-12 Characteristics of Sexually Transmitted Infections In Polyclinic dr.Sardjito Hospital Yogyakarta
Atika Karunia Zulfa, Jenita Doli Tine Donsu, Sugeng (Indonesia) ......................................... 86
O-13 Factors That Influences of People Living With HIV/AIDS (PLWHA) in VCT Division of General Hospital Waluyo Jati Kraksaan District Probolinggo
Cicilia Windiyaningih, lis Hanifah (Indonesia) ................................................................. 95

O-14 Advanced of Sarang Semut Infusion (Myrmecodia Pendens Merr & Perry) as Decreased Blood's Uric Acid in Male Rats of Wistar Strain
Agus Supriyono, Ariani Hesti (Indonesia) ........................................................................ 102

O-15 The Meaning and Role of Spirituality in HIV/AIDS Patients
Agus Prasetyo, Sodikin, Widyoningsih (Indonesia) .......................................................... 107

O-16 Therapeutic Communications Reduce The Patient's Anxiety of Pre Operation Patiens
Intan Mirantia, Harmilah, Surantana (Indonesia) ................................................................ 111

O-17 Analysis of Related Factors with A Subjective Complaint of Musculo Skeletal Diseases (Part II) : Characteristics and Relationship Characteristics Individual Factors on Workers Insurance Office
Arif Jauhari, Kuat Prabowo, Arfia Fridianti (Indonesia) ....................................................... 117

O-18 Effects of Husband’s Support in The Duration of Second Stage of Labor Among Primigravida in Indonesia
Sagita Darma Sari, Desi Ratnasari (Indonesia) .................................................................. 124

O-19 The Relationship Between Family Burden with Frequency of Recurrence Patient with Paranoid Schizophrenia
Livana PH, M Fathkul Mubin (Indonesia) ........................................................................... 129

O-20 Information Through The Flipbook to The Level of Knowledge About Domestic Violence in Fertile Couples in Sleman in 2017
Yani Widyastuti, Khadizah Haji Abdul Mumin, Yuliantisari (Brunai Darussalam) 135

Poster Presentation

P-01 Experience of Adolescents with Premenstrual Syndrome and Information-Focused Therapy (IFT) For Reducing Its Affective Symptoms
Dewi Marfuah, Nunung Nurhayati (Indonesia) ................................................................. 142

P-02 Correlation of Amount of Parity and Menopause Age in Padukuhan Cangkringan, Argomulyo Village, Cangkringan District, Sleman Regency, Special Region of Yogyakarta
Ninyng Nurdianti, Sukmawati (Indonesia) ........................................................................ 152

P-03 The Risk of Obesity and Developmental Delay in 2-5 Year Old Stunted Children in Kanigor, Saptosari, Gunung Kidul, Yogyakarta
Rr Dewi Ngaisyah, Siti Wahyuningsih (Indonesia) ............................................................. 158

P-04 Giving of Catfish Abon to the Creatinine Level of Haemodialysis Patients
Fery Lusviana Widiany, Ari Tri Astuti (Indonesia) .............................................................. 163

P-05 Effect of Moringa Oleifera Cookies in Anemia Adolescent
Devilnya Puspita Dewi, Farissa Fatimah (Indonesia) ......................................................... 167
P-06 Experiences of Drug Users in IIA Class Jail Yogyakarta
Sri Hendarsih, Wisnu Sadhana (Indonesia) ................................................................. 171

P-07 A Social Ecological Perspective on The Indonesian Maternal Mortality Problem; An Annotated Bibliography
Inraini Fitriia Syah (USA) .................................................................................................. 177

P-08 The Importance of Assistance to Cancer Patients with Mental Disorders
Muhammad Raftaz Kayani, Jenita Doli Tine Donsu (Pakistan) ........................................ 183

P-09 Larvicidal Activity of Star Fruit Extract (Averhoa carambola linn) Against Larvae of Aedes aegypti
Siti Zainatun Wasilah (Indonesia) ...................................................................................... 186

P-10 Factors Related to Decision Making Choosing Place of Delivery In Fakfak District West Papua Year 2017
Bernadet Dewi Kusuma Harimurti Kunde (Indonesia) .................................................... 193
The 4th International Conference on Health Science 2017 Committee

A. Steering Committee
Advisory Committee
1. The Head of Health Practitioners Training and Education Center of The Committee on Development and Empowerment of Health Human Resources of Health Ministry of Indonesia
2. The Head of Committee on Development and Empowerment of Health Human Resources of Health Ministry of Indonesia
3. Dr. Robert Priharjo, M.Sc, BSN PGCE RN
   Lecturer Anglia Ruskin University, United Kingdom

B. Organising Committee
Person in charge: Joko Susilo, SKM., M.Kes
Chairman I: Sari Hastuti, S.SiT, MPH
Chairman II: Mohamad Mirza Fauzie, S.SiT., M.Kes
Chairman III: Sri Arini Winarti Rinawati, SKM, M.Kep
Secretary: Yani Widyastuti, SSiT, M.Keb
Treasurer: Suwandi, SE
   Tanto Yuono, SE
   Ns Harmilah, M.Kep, Sp.MB

Members
1. Secretariat
   1. Dasilah
   2. Evriyani, Amd
   3. Eva Lidya Yunita, AMd.Kg
   4. Astuti Dwi E, Amd
   5. Veronica Anindyati Nugroho Putri, Amd

2. Scientific committee
   (keynote speaker+materials)
   1. Hesty Widyasih, SSiT, M.Keb
   2. Achmad Husein, SKM, MPd
   3. Sugeng, Ners., M.Sc
   4. Almira Sitasari, S.Gz, MPH
   5. Aryani Widayati, SSiT., MPd
   6. Eni Kurniati, S.Si., M.Sc

3. Proceeding committee
   1. Sabar Santosa, SPd, APP, M.Kes
   2. Dr. drg. Wiworo Haryani, M.Kes.
   3. Siti Nuryani, S.Sii., M.Sc
   4. Dr. Ir. I Made Alit Gunawan, M.Si.
   7. Dr. drg. Quroti Ayun, M.Kes
   8. Muryoto, SKM., M.Kes
   9. Ayu Triani, S.T.
   10. Desi Rochmawati, SS.M,Hum
   11. Andika Trisurini, S.Pd
   12. Dina fadhilah, S.Tr
   13. Apriyatni Condro Ekarini, S.SiT., M.Kes
   14. Sapto Harmoko, SIP

PROCEEDING BOOK
The 4th International Conference On Health Science 2017
4. Event Committee: 1. Yanuar Amin, S.ST.,SH
                     2. Rosa Delima Ekwantini, S.Kp.,M.Kes
                     3. Dra. Elza Ismail, M.Kes
                     5. Sarka Ade, SIP, S.Kep. MA
                     6. Rybob Khomes, S.Kom

5. Promotion, Publication and Business Committee: 1. Ika Prasetyo Nugroho, SE
                                                  2. Uki Wulanggita, SST
                                                  3. Nugraheni Tri Lestari, SKM, MPH
                                                  4. Mina Yumei Santi, SST., M.Kes
                                                  5. Etty Yuniarly, SST., MPH
                                                  6. Haryono, SKM., M.Kes
                                                  7. Trubus Basuki, AMd
                                                  8. Bekti Irianto

6. Registration: 1. Drs. Harya Kunjana
                  2. Narto, BE., STP., MP
                  3. Siti Hani Istiqomah, SKM., M.Kes
                  4. Nuriana Kartika Sari, SST
                  5. Suhardjono, S.Pd., S.SiT., M.Kes

7. Logistics: 1. Tjarono Sari, SKM., M.Kes
                2. Puti Sudarwati, S.Si
                3. Sukarti, SIP

8. Decoration, Place: 1. Suharyana, SKM
                       2. Purwanto

                  2. Harsono, AMd.
                  3. Abdul Hadi Kadarusno, SKM., MPH

10. Transportation: 1. Tri Widodo, AMd
                    2. Agus Pamuji
                    3. Giyanto
MATERNAL CHARACTERISTICS AND LOW BIRTH WEIGHT

Tri Budi Winarsih*, Hesty Widyasih, Margono Midwifery Department Health Polytechnic of Health Ministry Yogyakarta, Indonesia Email : winarsihtribudi@gmail.com

ABSTRACT

Low Birth Weight (LBW) was a condition when a baby was born less than 2500 grams. LBW was one of the causes of neonatal death. The percentage of LBW in Yogyakarta City started from 2013 to 2015 increased from 5.2% to 6.45%. LBW was caused by multifactors. One of the factors was the maternal factor. To investigate the relationship between maternal characteristics which included maternal age, parity, spacing, disease, maternal education, and third trimester Hemoglobin (Hb) concentration with the incident of LBW. This research was an analytical survey and used cross sectional design. Purposive sampling was used as the sampling technique and the subjects of this research were 155 delivering mothers at Yogyakarta City Public Hospital in 2016. The data were collected from medical record in 2016 which had been adjusted with inclusion and exclusion criteria. The data were analyzed using Logistic Regression. There was a significant correlation between maternal age (p = 0.022), parity (p = 0.015), and third trimester Hb (p = 0.008) with incident of LBW. There was no statistically significant relationship between birth spacing (p = 0.328), maternal disease (p = 0.801), and maternal education (p = 0.802) with LBW incidence. The conclusion of this research was mother's age <20 or >35, parity 1 or ≥4, and third trimester Hemoglobin (Hb) concentration <11 gr/dL was correlated with LBW. Hb levels in the third trimester are the factors that most influence the occurrence of LBW.

Keywords: Low Birth Weight, Maternal Characteristics.

INTRODUCTION

The infant mortality rate (IMR) is a health indicator that falls within one of the targets Millennium Development Goals (MDGs). The highest infant mortality is on the neonatal period of the first 28th days of life. Report by the World Health Organization (WHO) 80% of neonatal deaths are caused by low birth weight (LBW)1. LBW is the baby's weight at birth of less than 2500 grams. MDGs targeted to reduce ⅔ infant mortality from year conditions 1999 which is 23 per 1,000 live births by the year 2015. IMR in Yogyakarta was ranked the top five nationally but still unable to meet the MDGs targets2. Common causes of infant mortality in Yogyakarta are LBW and sepsis3.

There are many risk factors for LBW are maternal factors (lack of nutrition during pregnancy, mother's age <20 years or > 35 years, the distance pregnant and maternity too close, disease chronic), labor factor is too heavy, pregnancy factor (pregnant with hydramnion, multiple pregnancy, antepartum bleeding, pregnancy complications), factors the fetus (congenital defect, infection in the womb), and the factors that still are not known4. Some studies show that LBW is caused by maternal factors such as mothers with ≥3 parity, mothers with a history of preterm delivery, women giving birth to infant girls, and inadequate ANC, maternal education, age less than 20 years or more than 35 years, and history miscarriage or complications of pregnancy such as Gestational Diabetes Mellitus (GDM), hypertensive disorders during pregnancy, anemia, and oligohydramnios. premature birth, the presence of chronic disease (hypertension, DM, congestive heart...
failure, and HIV. 

Among many these factors, maternal factors thought to be one of the strongest risk factors causes LBW. Percentage of LBW in Yogyakarta from 2013 to 2015 increased from 5.2% to 6.45%. The purpose of this study to determine the relationship of maternal characteristics (maternal age, parity, birth spacing, maternal disease, maternal education, and Haemoglobin (Hb) in the third trimester) and LBW.

METHOD

This study is an analytic survey with cross sectional design. The sampling with purposive sampling and got 155 women in hospitals Yogyakarta in 2016. Data were collected from medical records of women giving birth in 2016 were already adjusted the inclusion and exclusion criteria. The inclusion criteria are mothers who deliver their babies with a complete medical record includes: maternal age, parity, spacing, disease, maternal education, and maternal Hb in the third trimester. Exclusion criteria mother who gave birth twins, and babies born with congenital defects. Data were analyzed using logistic regression and prevalence ratio 0.05 confidence level and confidence interval of 95%, using a computer program.

RESULTS AND DISCUSSION

Based on data from medical records, there are 1,113 mothers who delivered in the period January 1st to December 31st, 2016, researchers took a sample of 155 women. The results were analyzed using univariate, bivariate, and multivariate. Research Subject Characteristics

1. Characteristics of research subjects

Characteristics of research subjects in Table 1 which includes maternal age, parity, birth spacing, maternal disease, maternal education, Hb third trimester and birth weight are as follows:
Table 1. Frequency Distribution of Characteristics

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage N%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maternal age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;20 years or &gt;35 years</td>
<td>48</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>20-35 years</td>
<td>107</td>
<td>69</td>
</tr>
<tr>
<td>2</td>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 or ≥4</td>
<td>78</td>
<td>50.3</td>
</tr>
<tr>
<td></td>
<td>2-3</td>
<td>77</td>
<td>49.7</td>
</tr>
<tr>
<td>3</td>
<td>Spacing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;2 years</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>≥2 years</td>
<td>74</td>
<td>86</td>
</tr>
<tr>
<td>4</td>
<td>Maternal disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>There’s hypertension or heart disease or kidney disease</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>No hypertension or heart or kidney disease</td>
<td>138</td>
<td>89</td>
</tr>
<tr>
<td>5</td>
<td>Maternal education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤Junior High School</td>
<td>44</td>
<td>28.4</td>
</tr>
<tr>
<td></td>
<td>≥Senior High School</td>
<td>111</td>
<td>71.6</td>
</tr>
<tr>
<td>6</td>
<td>Hb in the third trimester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 11 g/dL</td>
<td>48</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>≥11 g/dL</td>
<td>107</td>
<td>69</td>
</tr>
<tr>
<td>7</td>
<td>LBW incidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LBW</td>
<td>68</td>
<td>43.9</td>
</tr>
<tr>
<td></td>
<td>Normal weight</td>
<td>87</td>
<td>56.1</td>
</tr>
</tbody>
</table>

Based on the analysis presented in table 1, 155 mothers who gave birth low birth weight baby are 43.9%. Mothers who gave birth at <20 or >35 years old are 31%. Mother with parity 1 or ≥4 are 50.3%. Mothers who gave birth to a second child or more for 86 of the 155 maternal and 14% of maternal with spacing <2 years of the birth of a previous child. Mothers who give birth with diseases such as hypertension or heart or kidney disease are 11%. Maternal education ≤Junior High School (JHS) are 28.4%. There are 31% mothers who give birth with hemoglobin levels in the third trimester of <11 g/dL. Mothers who give birth low birth weight baby are 43.9%.
Table 2. Relationship of Maternal Characteristics and LBW in Yogyakarta City Public Hospital 2016

<table>
<thead>
<tr>
<th>Characteristics of</th>
<th>Incidence</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LBW</td>
<td>Normal Weight</td>
</tr>
<tr>
<td>N%</td>
<td>N%</td>
<td></td>
</tr>
</tbody>
</table>

1. Maternal age
   - <20 years or >35 years
     - 28 58.3 20 41.7 5.9 0.022 2.345 1.171 4.697 0.192
     - 40 37.4 66 62.6
   - 20-35 years

2. Spacing
   - <2 year
     - 6 50 6 50 1.403 0.328 2.083 0.608 7.141 0.127
   - ≥2 year
     - 24 32.4 50 67.6

3. Parity
   - 1 or ≥4
     - 42 54.8 36 46.2 6.345 0.015 2.288 1.196 4.379 0.198
   - 2-3
     - 36 33.8 51 43.2

4. Maternal disease
   - there's hypertension or heart disease or kidney disease
     - 8 47.1 9 52.9 0.079 0.801 1.156 0.421 3.173 0.023
   - no hypertension or heart disease or kidney disease
     - 60 43.5 78 56.5

5. Maternal education
   - ≤JHS
     - 20 45.5 24 54.5 0.063 0.802 1.094 0.542 2.207 0.020
   - ≥SHS
     - 48 43.2 63 56.8

6. Hb in the third trimester
   - <11 gr/dL
     - 29 60.4 19 39.6 7.73 0.008 2.661 1.322 5.358 0.218
   - ≥11 gr/dL
     - 39 36.4 68 69

Table 2 showed the relationship between maternal characteristics and LBW. Analysis was continued to multivariate analyze, as shown at table 3.

Table 3. Multivariate Analysis using Logistic Regression

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>B</th>
<th>Df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% CI for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>1</td>
<td>Hb in the third trimester</td>
<td>.958</td>
<td>1</td>
<td>.010</td>
<td>2.606</td>
<td>1.254</td>
</tr>
<tr>
<td>2</td>
<td>Maternal age</td>
<td>.938</td>
<td>1</td>
<td>.013</td>
<td>2.555</td>
<td>1.224</td>
</tr>
<tr>
<td>3</td>
<td>Parity</td>
<td>.864</td>
<td>1</td>
<td>.013</td>
<td>2.372</td>
<td>1.197</td>
</tr>
</tbody>
</table>

All variables related to bivariate analysis were multivariate analyzed. The result of multivariate analysis in table 3 shows that Hb in third trimester is the most related to the occurrence of LBW, that is p-value = 0.010 and PR equal to 2.606. This means that mothers with Hb levels in the third trimester <11 g/dL increase the incidence of LBW by 2,606 times greater than that of women with Hb in the third trimester ≥11 g/dL.

2. Maternal age relationship and LBW

The results showed no significant correlation between maternal age with LBW p-value 0.022 and mothers by <20 or >35 years old had a 2.3 times greater risk for experiencing LBW compared to mothers aged 20-35 years (95% CI 1.171-4.697). The results of research indicate that maternal <20 years old 3 times risk giving birth...
LBW\textsuperscript{9}. There are differences Odds Ratio (OR) with PR this study due to its location on a research study Demelash H et al performed in four second referral hospital whereas in this study in the first referral hospital.

The results of this study are also consistent with studies stating that the mother who gave birth to the >35 years old 1.55 times the risk of having a low birth weight\textsuperscript{10}. Differences RR and PR with this research because sampling in research Veloso et al were taken from 1996 to 2010, while in this study sample within a period of one year 2016.

The results of this study in accordance with the theory at the age of less than 20 years of reproductive organs has not functioned perfectly and there is also competition for nutritional competition for mothers who are still in development stage with the fetus. This will result in the higher premature birth, low birth weight and birth defects, while at the age of 35 years, although mentally and socially more stable economy, but physical and reproductive already finding it a setback\textsuperscript{9}.

3. Parity relationship with LBW

The results of this study showed a significant relationship between parity with LBW p-value of 0.015. Mother with parity 1 or ≥4 had a 2.3 times greater risk for experiencing LBW compared with mothers with parity 2-3 (95% CI 1.196 to 4.379).

This is consistent with studies that claim parity with LBW 2.6 times more at risk of low birth weight (95% CI 1.62 to 4.10)\textsuperscript{9}. There is a big difference risk of LBW in this study due to its location on a research study conducted in the second referral hospital whereas in this study in the first referral hospital. The results also support the research that states that primiparous 1.74 times the risk of having low birth weight (95% CI 1.19 to 2.48)\textsuperscript{10}. Differences RR and PR with this research because sampling in research Veloso et al were taken from 1996 to 2010, while in this study sample within a period of one year 2016.

The results are consistent with the theory that women with parity 1 and ≥4 at risk of having low birth weight, in primiparous associated with the immature organ function in maintaining pregnancy and accept the presence of a fetus\textsuperscript{11}. Women who have given birth four times or more children because parity is too high will lead to disruption of the uterus, especially in the case of blood vessel function. Repeated pregnancy will cause damage to the blood vessel wall of the uterus, it will affect the nutrients to the fetus in subsequent pregnancies\textsuperscript{12}.

4. Hb in the third trimester relationship with LBW

The results showed that Hb in the third trimester have a meaningful relationship with a p-value of 0.008 and 2.7 times Hb third trimester increased the risk of LBW (95% CI 1.322 to 5.358). These results are consistent with studies stating that women with Hb third trimester <11gr/dL had a 2.9 times greater risk for experiencing LBW (95% CI 1.09 to 8.2)\textsuperscript{13}. The big difference is a risk because of the research conducted within the scope of the first-level health facilities, while in this study within the scope of the referral primary health facilities.

This research is consistent with the theory that states in the last trimester of pregnancy increased need for iron increases with respect to their loss of the normal basal gastrointestinal tract, skin, urinary tract, the needs of the placenta, umbilical cord and fetal growth. The last trimester of pregnancy is also a period when most fetal growth takes place and also to accumulation of fatty deposits, iron and calcium for postnatal needs. If there is not enough iron to meet the needs of the mother, fetus and placenta, maternal iron stores will be used and the mass of red blood cells drop resulting mother IUGR because it can cause decreased oxygen to the fetus\textsuperscript{14}. 

PROCEEDING BOOK

The 4\textsuperscript{th} International Conference On Health Science 2017
5. Characteristics of mothers who are not associated with LBW include:

a. Birth spacing relationship with LBW.

Birth spacing is a subject to be analyzed in this study are mothers who gave birth to a second child or more. In this study proved to have a significant relationship between birth spacing with LBW p-value of 0.328. However clinically mother who giving birth with spacing <2 years had a 2.1 times greater risk for experiencing LBW (95% CI 0.608 to 7.141).

The results of this study support the research that states that there is no significant relationship between birth spacing with LBW with a p-value of 0.55. Appropriate research, clinical research also showed that women with birth spacing <2 years 2.9 times greater LBW (95% CI 1.055 to 8.258). The big difference for LBW risk because the scope of the research conducted in the first-level health facilities, while in this study conducted at referral health facilities I.

These results are not in accordance with the studies that the spacing of <2 years 5.11 times the risk of having low birth weight with a p-value = 0.03 (95% CI 1.6 to 16.18).

b. Relationship of maternal disease with LBW.

The results of this study showed no significant association between maternal diseases with LBW with a p-value of 0.801. However, clinical mothers with hypertension or heart disease or kidney 1.2 times more likely to have LBW (95% CI 0.421 to 3.173).

The results of this study are not in accordance with the studies that the mothers with hypertension 5 times the risk of having low birth weight (95% CI 4325-5853) and studies that women with chronic diseases have a significant relationship with the occurrence of low birth weight p-value <0.005, mothers with chronic disease 5.3 times the risk of having low birth weight (95% CI 1.12-25.45).

Meaningless spacing births with LBW This occurs because the sample size of mothers with the disease found only 11% of the total sample.

In theory hypertension will cause vasoconstriction thus decreasing blood flow to the uterus and placenta abruption occurred. This will cause a decrease in the amount of oxygen to the fetal circulation within the placenta. As a result, the placenta becomes ischemic and fetal growth restriction occurs. Heart disease will give bad influence to the pregnancy and the fetus in the womb. This disease will cause a decrease in fetal oxygenation that will cause fetal growth disorders that can ultimately lead to low birth weight. Impaired fetal growth is also associated with loss of proteins associated with the process. Kidney disease is relatively rare in pregnant women, but when kidney disease during pregnancy would be associated with the occurrence of birth complications.

c. Relationships mothers with LBW education.

The results of this study showed no significant association between maternal education with LBW with a p-value of 0.802. However, clinical mothers with maternal education ≤JHS have a 1.1 times greater risk for experiencing LBW (95% CI 0.542 to 2.207).

The results are consistent with research that states that low maternal education do not have a meaningful relationship with LBW p-value 0487 by RR of 0.6 (95% CI 0.1-2.6). In line with research that states that mothers with primary education last (<9 years) had no significant relationship with LBW p-value 0523, but clinically mother who gave birth to primary education is 6 times more at risk of having low birth weight (95% CI 0.38- 6.68). The big difference because of the risk it represents a meta-analysis study.
In theory, the formal education that a person will give insight to the person against environmental phenomena that occurs, the higher the level of education will be more extensive insight into thinking that the decisions to be taken more realistic and rational. In the context of a person's health if good enough education, early symptoms of the disease will be identified and encourage that person to seek preventive efforts. Meaningless relationship between maternal education with LBW can be caused by factors causing LBW complementary to each other, so that even if the mother's education ≤JHS but give birth to babies with normal weight, and this is because of the tendency of mothers with ≤JHS education is supported by a good nutritional status, age is still in the reproductive age (20-35 years) who did not have anemia.

CONCLUSION
Based on the results of research and discussion, it can be concluded that there is a relationship between maternal age, maternal parity, and Hb in the third trimester with LBW. Hb levels in the third trimester are the factors that most influence the occurrence of LBW.

RECOMMENDATION
Recommendation for Midwives Implementing and Related Health Workers in Yogyakarta City Public Hospital for prenatal screening on pregnant mothers which include maternal age, maternal chants, and hemoglobin level as well as educate the importance of Fe consumption for pregnant women so that mothers can prepare for the pregnancy and reduce the incidence of low birth weight. For mothers who are planning a pregnancy and/or pregnant women, the results of this study add insight and knowledge and it is recommended for pregnant in the reproductive age (20-35 years), parity 2-3, and maintain levels of maternal Hb ≥11 g/dL in the third trimester, for reducing the risk of LBW. For the researchers, if possible to do further research with cohort design s to ensure that exposure to precede the effect.

REFERENCES


