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**P R O C E E D I N G**

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“Midwives Leading The Way with Quality Care”

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**Integrated Midwives Association of the Philippines (IMAP), Inc. 2018**

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“Midwives Leading The Way with Quality Care”

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Pengurus Pusat Ikatan Bidan Indonesia

Jl. Johar Baru V No. D13, Johar Baru

Jakarta Pusat 10560 Indonesia

Phone: +6221 4226043, 4247789

Email: ppibi@ibi.or.id

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A great amount of planning an

d organizing is required to hold a successful conference.

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Lastly, we are indebted to all committees who volunteered their time and energy for their great support and contribution to help organize successful conference.

**Conference Committee**

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**FOREWORD/PREFACE**

Every year on May 5th the world celebrate as International Day of The Midwife (IDM) where internationally midwives, embrace the individual midwife development their professional skills through many activities with aims to strengthen the network within midwives as well as other professions to enlarge the knowledge and skills of midwives inselfs.

In order to commemorate IDM 2018, Indonesian Midwives Association (IMA/IBI) in collaboration with Integrated Midwives Association of the Philippines (IMAP) will held an INTERNATIONAL MIDWIFERY SCIENTIFIC CONFERENCE ON CELEBRATING THE INTERNATIONAL DAY OF THE MIDWIFE 2018, it hold in Jakarta, Indonesia on May 3rd up to May 5th, 2018.

The International Midwifery Scientific Conference is a scientific forum aimed to improve knowledge and skills of midwives in optimizing the quality care of maternal & child health, and family planning. This conference, also, as an opportunity to facilitate researchers and scientists in midwifery field to conduct scientific discussions on developments, as well as current issues related with Maternal and Child Health services at national and global context. The 2018 conference theme is “Midwives Leading the Way with Quality Care”.

The International Midwifery Scientific Conference continues a tradition of bringing together researchers, academics and professionals from all over the world, experts in midwifery. The conference particularly encouraged the interaction of research students and developing academics with the more established academic community in an informal setting to present and to discuss new and current work. Their contributions helped to make the Conference as outstanding as it has been.

This proceedings record the fully refereed papers presented at the conference. The papers contributed the most recent scientific knowledge known in the field of midwifery. This Proceeding will furnish the scientists of the world with an excellent reference book and also be an impetus to stimulate further study and research in all midwifery areas.

We thank all authors and participants for their contributions.

**Indonesian Midwives Association**

**Integrated Midwives Association of the Philippines (IMAP), Inc.**

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**PLENARY**

**SESSION**

**SUMMARY**

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E C L A M P S I A

**Alejandro R. San Pedro**

Philippines

Eclampsia remains to be among the two top main causes of direct maternal death and disability in the Philippines. Eclampsia is defined as new onset of grand mal seizure activity and/or unexplained coma during or after the 20th week of gestation or postpartum in a woman with signs or symptoms of preeclampsia. However, eclampsia can occur even in the absence of hypertension with proteinuria based on a study in the UK. Similarly, hypertension was absent in some cases of eclampsia in a review done in the United States.

Most cases of eclampsia presents in the third trimester of pregnancy, with about 80% of eclamptic seizures occuring intrapartum or within the first 48 hours following delivery. Early detection of preeclampsia is important to identify its clinical manifestations like hypertension and proteinuria and even some coexisting systematic abnormalities involving the kidneys, liver or blood. The fetal manifestations of preeclampsia are fetal growth restriction, reduced amniotic fluid, and abnormal fetal oxygenation.

Delivery of the fetus is the only cure for severe preeclampsia. Magnesium sulfate (MgSO4) for seizure prophylaxis, antihypertensive management, induction of labor or cesarean section are treatment options. Although delivery is appropriate for the mother, it may not be optimal for the premature fetus. Antenatal corticosteroid injection given to the mother promotes lung maturity of the preterm fetus.

In the Philippines the use of MgS04 is the mainstay in the treatment of eclamptic convulsion and for seizure prophylaxis for severe preeclampsia. Injection of a loading dose of MgSO4 is among the signal functions of Basic Emergency Obstetrics and Newborn Care (BEmONC) for those practicing in areas remote from the hospital. The use of this life saving drug by midwives is guided by a Philippine Department of Health Administrative Order (DOH A.O. No. 0020-2015). However, the DOH A.O. specifies that the drug should be given by a midwife who is trained on its use, the presence of an

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E C L A M P S I A

obstetrical emergency that warrants it and that there is no doctor. Because the Midwifery Act of 1992 regulates midwifery practice that focuses on normal pregnancy, labor and childbirth, a standing order by the back-up doctor in a health facility is required. MgSO4 injected to the mother is also known to provide neuroprotection to the newborn baby.

Prevention of preeclampsia and eclampsia remains illusive, although some drugs have been found to be useful. Given the importance of MgSO4, learning its pharmacology and safe use gains value because this drug will benefit many women with eclampsia or severe preeclampsia and their babies when the need for it arises.

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CHALLENGES : THE PROVISION OF MATERNAL AND CHILD HEALTH SERVICES BY MIDWIVES IN DEVELOPING COUNTRY

Ms. Patricia M. Gomez, RM

Executive Director Integrated Midwives Association of the Philippines (IMAP), Inc.

Introduction

Midwives in the Philippines face challenges in improving their status and practice. The Department of Health epidemiological trend studies revealed that each year about 2.3 Filipino women become pregnant. An estimated 2 million would give birth per year. In 2010, the maternal mortality ratio due to complications occurring in the course of labor, delivery and puerperium is 38.4/ 1000 live births (DOH 2010), hypertensive complications is 35.2 / 1000 live births (DOH 2010) which can be attributed to close birth spacing, too frequent poor detection management of high risk pregnancies, inadequate referral system, maternal micronutrient malnutrition and inadequate and low utilization of health services, and deliveries done at home. It is for this reason that an assessment of the provision of comprehensive approach of preventive and curative maternal and newborn health care along with legal mandates such as Midwifery Act, Midwifery Education, Continuing Professional Development, Competencies Standards of Practicing Midwives, Political System, increasing trend of private birthing clinics, referral system will be the focus of this paper.

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**GLOBAL STRATEGIC FOR MIDWIFERY’S HUMAN RESOURCES IN UNIVERSAL HEALTH COVERAGE ERA**

*Rustini Floranita*

*NPO RMNCAH/GER, WHO Indonesia*

In December 2012, the United Nations General Assembly called upon all governments to “urgently and significantly scale up efforts to accelerate the transition towards universal access to affordable and quality healthcare services”. The evolving momentum for universal health coverage (UHC), with its principles of equity and social justice, aims to ensure that all members of a society can access the health

care services they need without incurring financial hardship. UHC encompasses the three dimensions of who is covered (population coverage), what is covered (health-care benefits) and how much of the cost is covered (financial protection), all of which may expand over time.

Addressing these three dimensions of UHC within the boundaries of fiscal space is challenging for all countries. It requires continuing political commitment and leadership to distribute available resources, especially human resources for health (HRH), in an efficient, equitable and sustainable manner to match population needs. The health workforce is central to a country’s response to these challenges. Reaching a greater percentage of the population, extending the benefit package and improving the quality of the care provided requires commensurate attention to the governance and management of the health-care workforce, including its stock, skill mix, distribution, productivity and quality. Matching population health needs with a supply of competent and motivated health workers that are both fit for purpose and fit to practice in the country context is therefore the foundation for accelerating the attainment of UHC.

Nursing and midwifery services are key components of health systems and are essential to society. The contribution of nurses and midwives has long been acknowledged as being crucial to improving the health outcomes of individuals, families and communities. Nurses and midwives being a part of the frontline workers are engaged in efforts to promote health, prevent illness and to renew Primary Health

care (PHC) based on the core values of equity, solidarity, social justice, universal access to efficient and affordable services, multisectoral action, decentralization and community participation. Universal Health Coverage (UHC) encompasses principles of equity and social justice, arising from the ‘Health for All’ movement of the 1970s, and enshrined in the Alma Ata Declaration on Primary Health care in 1978. The Government Chief Nursing and Midwifery Officers (GCNMOs) participating in the 2014 Global Forum recognizes that to achieve UHC, several factors must be in place. In particular, a functioning and efficient health system that meets population health needs through people-centred integrated care is essential. Such a system should ensure that people seeking health services do not suffer financial hardship when using and accessing healthcare services. Above all, there should be appropriately educated, regulated, and motivated health workers to provide the services.

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The nursing and midwifery professions continue to evolve and their roles are influenced by local and global challenges. Nurses and midwives are prepared to respond and manage health-care needs across the life span. Within the context of Primary health-care and UHC, nursing and midwifery services contribute to reduction of morbidity and mortality, resulting from emerging and re-emerging health problems. Nurses and midwives are frontline professionals who use an integrated and comprehensive approach including health promotion, disease prevention, treatment, rehabilitation and palliative care.

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**ORAL**

**PRESENTATION SESSION**

Proceeding - The 2018 International Midwifery Scientific Conference

**PEPPERRMINT OIL GIVING EFFECT OF PREGNANT WOMEN**

**WITH PRURITUS (itching) AND TRIMESTER III IN BPS NURHASANNAH S.Tr.Keb TELUK BETUNG SELATAN BANDAR LAMPUNG YEAR 2017**

Dainty Maternity, Zakiyatus Salamah

ABSTRACT

Based on research, about 18% of pregnant women in France suffered pruritus. In India of 200 pregnant women, approximately 61.5% were experiencing pruritus. Pruritus is a sensation of skin irritating and provoking to scratch. Itch receptors are not myelinated, has a brush-like nerve endings (penicillate) which is only found in the skin, mucous membranes and cornea. The purpose of research is known the effect of peppermint oil in pregnant women with pruritus (itching) in the third trimester Str.Keb Nurhasannah BPS Teluk Betung Selatan Bandar Lampung Year 2017. This type of research is quantitative approach to *pre-experimental design* withmethod *one sample pretest* posttest. The population in this study is the third trimester pregnant women who experienced *pruritus* (itching) in BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung in 2017. This study was conducted in February-August 2017. Obtained a sample of 15 people with the criteria of pregnant women with pruritus gravidarum, willing to become respondents and peppermint oil applied only to the experiencing itching. Data collection using observation sheet and univariate analysis of data is *T-dependent test.* The survey results revealed the average value before administration of peppermint oil amounted to 4.67 with a standard deviation of 1.234, while the average value after being given peppermint oil was 2.93 with a standard deviation of 1.223. There is the effect of peppermint oil to cope with pruritus (itching) in the third trimester pregnant women (p value < 0.05 is 0.000). Expected in pregnant women to pay attention to health during pregnancy, especially their symptoms of pruritus (itching) during pregnancy and how to cope by using peppermint oil.

Keywords: Peppermint oil, pruritus (itching), Maternal, Trimester III

**PRELIMINARY**

Pregnancy is defined as the fertility or unification of spermatozoa and ovum and followed by nidation or implantation. When calculated from the time of fertilization until the birth of the baby, normal pregnancy will take place within 40 weeks or 10 months or 9 months according to the international calendar. 1

Hormonal changes that are triggered by a normal pregnancy may have a considerable effect on the skin. Itchiness or in the world of health is called Pruritus is a common discomfort in the second trimester, or higher in the trimester that occurs when bile secretion does not flow normally in the small channel in the liver, bile salts accumulate in the skin, which makes itchy. Itching can be a person who can be brief and feels normal, and feel a strange excitement when it can scratch that itchy part. There will be some people who take chronic irritants that are very disturbing for years and are felt throughout the body. Itching is very great, can be mentally stressed. Chronic pruritus can really go down the quality of life, arise not pretty anymore due to the rash that imprint on the body.2

Pruritus is an irritating skin sensation and gives rise to stimulation to scratch. The itching receptors do not bermelelin, have a penicillate nerve endings found only in the skin, mucous membranes and cornea. Pruritus is one of the most common complaints of dermatologic disorders. Pruritus is a symptom and various skin diseases. If not accompanied by skin disorders, then called Pruritus Essential or Pruritus sine materia. Essential pruritus is caused by or associated with many conditions. 3

Pruritus gravidarum is induced by estrogen and is sometimes associated with cholestasis (obstruction and stasis in the bile ducts). Pruritus is especially present in the last trimester of pregnancy, starting with the abdomen or body, then becoming a generalist. There are times when Pruritus is accompanied by anorexia, nausea, or vomiting. The objective looks excoriated because of scratching. Pruritus will disappear after delivery, but may be residual in subsequent pregnancies.3

Pruritus treatment can be done using peppermint. Peppermint (Mentha piperita) is a mint family. This plant contains essential oils that the main component is menthol (50-60%). By cooling the skin, menthol, decrease the itch caused by histamine. The administration of pappermint oil during pregnancy

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and breastfeeding has no toxic effects present in pappermint oil in overcoming pruritus in pregnancy. The mechanism of menthol effect inhibits itching by activating the A-delta fibers and k-opioid receptors so as not to cause harmful effects for the mother and fetus.4

The results of pre-survey conducted by researchers who average pregnant women who checked into BPS Nurhasannah Str.Keb Teluk Betung Selatan Bandar Lampung as many as 42 people from that number as many as 13 people or (30.95%) who complained Pruritus (itching) during pregnancy.

It is the background of the author to compose Scientific Writing with the title "The Influence of Pepperrmint Oil Giving on Pregnant Women with Pruritus (itching) In Trimester III at BPS Nurhasannah Str.Keb Teluk Betung Selatan Bandar Lampung Year 2017**”.**

**RESEARCH METHODS**

The type of research used is quantitative with pre experimental design approach with one sample pretest posttest method. Population in this research is pregnant mother of trimester III that experiencing pruritus (itching) at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung 2017. This research was conducted in February - August 2017. Obtained sample of 15 people with mother criteria pregnant with pruritus gravidarum, willing to be the respondent and peppermint oil is applied only to the itchy part.

Data collection using observation sheet and univariate analysis of data used is T-dependent test.

**WORK STEPS**

1. Pre experiment: pre test is done by using VAS used to view Pruritus image before intervention. 2. Experiments: giving 0.5 peppermint essential oil. Peppermint contains essential oils whose components are menthol (50-60%). By cooling the skin, menthol, lower itch caused by histamine by applying on the part of the Pruritus (itching) done 2 times a day for 2 weeks. 3. Post trial: post test conducted using VAS used to view Pruritus picture after intervention.

**MEASUREMENT SCALE**

In this assessment the client is asked to see the pain that he feels is moderately ill. Numerical scales are used instead of word descriptor tools. In this case the patient with illness 0 to 10. Number 0 means the condition is not sick, the number 10 most severe pain.

**Figure 2.2 Intensity Scale of Numerical Pain (0-10)**

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0 1 2 3 4 5 6 7 8 9 10

No Medium Very

**RESEARCH RESULT**

**Table 1**

**Characteristics Of Respondents Based On Maternal Age, Gestational Age And Parity At BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan**

**Bandar Lampung In 2017**

| Age | Amount | Presentase (%) | Pruritus (itching) Pre | Pruritus  (itching)  Post |
| --- | --- | --- | --- | --- |
| < 20-25 year | 5 | 33,4 % | 5 | 3 |
| 26-30 year | 5 | 33,3 % | 4,4 | 2,8 |

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| > 30 t year | 5 | 33,3 % | 4,6 | 3 |
| --- | --- | --- | --- | --- |
| Total | 15 | 100 % | - | - |
| Usia kehamilan | Amount | Presentase % | Pre | Post |
| 30 weeks | 1 | 6.7 % | 3 | 1 |
| 31 weeks | 1 | 6,7 % | 5 | 3 |
| 33 weeks | 2 | 13,3 % | 4 | 2,5 |
| 34 weeks | 2 | 13,3 % | 4,5 | 2,5 |
| 35 weeks | 3 | 20,0 % | 5,3 | 3,7 |
| 36 weeks | 2 | 13,3 % | 5,5 | 4 |
| 37 weeks | 3 | 20,0 % | 4,7 | 2,7 |
| 38 weeks | 1 | 6,7 % | 4 | 3 |
| Amount | 15 | 100 % | - | - |
| Parity | Amount | Persentase % | Pre | Post |
| PRIMI | 3 | 20,0 % | 4 | 2,3 |
| MULTI | 10 | 66,7 % | 5 | 3,3 |
| GRANDE | 2 | 13,3 % | 4 | 2 |
| Amount | 15 | 100% | - | - |

Table 1 shows the frequency distribution of pregnant women based on maternal age, gestational age and parity that of 15 respondents of trimester III pregnant women can be known who are <20-25 years old as many as 5 (33,4%) respondents, with average value before and (5-3), ages 26-30 years, as many as 5 (33.3%) of respondents, with mean values before and after giving (44-2,8), and age> 30 years were 5 (33, 3%) of respondents, with mean values before and after administration (4.6-3). Based on 30 weeks gestational age of 1 (6.7%) respondents, with average score before and after administration (3- 1), 31 weeks gestation age 1 (6.7%) respondents, with mean score before and after delivery (5-3), 33 weeks 'gestational age of 2 (13.3%) of respondents, with mean score before and after administration (4- 2,5), 34 weeks' gestational age of 2 (13.3 %) of respondents,with mean values before and after administration (4.5-2.5), 35 weeks' gestation age of 3 (20.0%) of respondents, with mean values before and after (5,3-3,7) 36 weeks' gestational age was 2 (13.3%), with mean score before and after administration (5,5-4), 37 week pregnancy age 3 (20,0%), with mean value before and after delivery (4.7-2.7), 38 weeks gestation age of 1 (6.7%) of respondents, with mean values before and after administration (4-3). And based on parity that primi gravida counted 3 (20,0%) respondents, with mean value before and after giving (4-2,3), multi gravida counted 10 (66,7%) respondents, before and after administration (5-3.3), while in multi gravida grande 2 (13.3%) respondents, with average values before and after administration (4-2).

**UNIVARIATE**

**a. Pregnant Women With Pruritus (Itching) In The Third Trimester Before Being Given Peppermint Oil**

**Table 2**

**Pregnant Women With Pruritus (Itching) In The Third Trimester Before Being Given Peppermint Oil At BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017**

| Pruritus (itching) | N | The lowest  value | The highest  score | Average | Standard  Devisiasi |
| --- | --- | --- | --- | --- | --- |
| Before | 15 | 3 | 7 | 4,67 | 1,234 |

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Based on table 2 it is known that the mean (mean) of pregnant women with pruritus (itching) in third trimester before being given peppermint oil at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017 is 4.67 with standard deviation 1,234.

**b. Pregnant Women With Pruritus (Itching) In The Third Trimester After Being Given Peppermint Oil**

**Table 3**

**Pregnant Women With Pruritus (Itching) In The Third Trimester After Being Given Peppermint Oil At BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017**

| Pruritus  (itching) | N | The lowest value | The highest score | Average | Standard  Devisiasi |
| --- | --- | --- | --- | --- | --- |
| After | 15 | 1 | 5 | 2.93 | 1,223 |

Based on table 3 it is known that the mean (mean) of pregnant women with pruritus (itching) in the third trimester after being given peppermint oil at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017 is 2.93 with standard deviation of 1,223.

**c. Pregnant Women With Pruritus (Itching) In The Third Trimester Based On The Day Giving Peppermint Oil**

**Table 4.6**

**Pruritus Frequency Analysis (Itching) In Pregnant Women**

**After Giving Peppermint Oil**

| Variable | N | Mean | SD | SE | P-Value |
| --- | --- | --- | --- | --- | --- |
| Before | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 1 | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 2 | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 3 | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 4 | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 5 | 15 | 4,67 | 1,234 | 0,319 | 0,000 |
| Day 6 | 15 | 4,47 | 1.060 | 0,274 | 0,082 |
| Day 7 | 15 | 3,93 | 1,534 | 0,396 | 0,001 |
| Day 8 | 15 | 3,73 | 1,486 | 0,384 | 0,000 |
| Day 9 | 15 | 3,47 | 1,356 | 0,350 | 0,000 |
| Day 10 | 15 | 3,40 | 1,352 | 0,349 | 0,000 |
| Day 11 | 15 | 3,13 | 1,407 | 0,363 | 0,000 |
| Day 12 | 15 | 2,93 | 1,223 | 0,316 | 0,000 |
| Day 13 | 15 | 2,93 | 1,223 | 0,316 | 0,000 |
| Day 14 | 15 | 2,93 | 1,223 | 0,316 | 0,000 |

Based on Table 4.6 it is known that the incidence of third trimester after observation with pappermint oil treatment decreased on day 7 with an average of 3.93, and the most effective and significant on day 12 with an average of 2.93. So it can be concluded the incidence of pruritus (itching) with pappermint oil effectively and efficiently without side effects.

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**BIVARIATE**

This bivariate analysis uses a t test dependent using pretest value (before peppermint oil therapy) and posttest value (on the 14th day after peppermint oil therapy), get the following results: **Table 7**

**Effect Of Peppermint Oil On Pregnant Women With Pruritus (Itching) In Third Trimester At BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017**

| Pruritus  (itching) | N | Mean | St. Dev | *p-value* | T |
| --- | --- | --- | --- | --- | --- |
| Before | 15 | 4,67 | 1,234 | 0,000 | 11,309 |
| After | 2,93 | 1,223 |

Based on Table 7 Pruritus (average) pruritus (itch) rate on respondents before peppermint oil was administered at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung was 4.67 with a standard deviation of 1,234. While the mean (average) pruritus (itching) on respondents after given peppermint oil at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung is 2.93 with a standard deviation of 1.223. With t arithmetic of 11.309.

The result of statistical test with paired sample test result of p-value = 0.000 which means p-value <α (0,05) this result show existence of influence of peppermint oil in pregnant mother with pruritus (itch) in third trimester at BPS Nurhasannah, S. Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017.

**DISCUSSION**

Based on Table 4.7 Pruritus (average) pruritus (itch) rate on respondents before peppermint oil was administered at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung was 4.67 with a standard deviation of 1,234. While the mean (average) pruritus (itching) on respondents after given peppermint oil at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung is 2.93 with a standard deviation of 1,223.

The result of statistical test with paired sample test result of p-value = 0.000 which means p-value <α (0,05) this result show existence of influence of peppermint oil in pregnant mother with pruritus (itch) in third trimester at BPS Nurhasannah, S. Tr.Keb Teluk Betung Selatan Bandar Lampung Year 2017.

The results of this study are supported by research conducted by Greg Arnold on the Effect of Peppermint Oil on Symptomatic Pruritus Treatment in Pregnant Women. The researchers found an 81% reduction in itchy discomfort in pregnant women treated with peppermint oil.

According to the study there was an average difference after peppermint oil treatment of 2.93. According to researchers the average decrease in the scores of the itching rate is due to the effects of menthol that can cool the skin so that it can reduce the severity of itching.

Based on the results of the study of differences in gasification results in pregnant women who have been given peppermint oil therapy for 14 days given 2 times in the morning and afternoon, the results obtained varying degrees. Mothers who experienced a decrease of 1 level as many as 6 respondents, decreased by 2 levels 8 respondents and decreased by 3 levels there was 1 respondent.

Based on the research results, the characteristics of pregnant women consisting of age, gestational age and parity are factors that contribute to the formation of health behaviors, including efforts to overcome the itching of pregnant women. The average occurs in multi gravida with 35 weeks and 37

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weeks' gestation. The cause of the occurrence of pruritus (itching) is most prevalent in primi gravida is not known for sure. But usually itchy happens because there are like the stretch of skin and arise strie. A person's age is the number of ages that is largely an indicator of maturity in every decision that exists in each experience. The higher the age, the maturity and strength of a person will be more mature in thinking and logical. Then the parity factor is identical with the experience or perception factor, if the first respondent is pregnant, the respondent is afraid to try new things, but on the contrary the respondent who has been pregnant, they will not be confused in taking their action has never experienced previous pregnancy and want to try new things very high.

So according to researchers giving peppermint oil can be used as an alternative to treat itching in pregnant women who have pruritus gravidarum. Proper herbal treatment to reduce itching and not cause side effects in pregnant women. The results of this study are very precise and flat on average 3.93, and the most effective and significant on day 12 with an average of 2.93. Provision of pappermint oil on pruritus (itching) effective and efficient without any side effects.

**CONCLUSION**

Based on the results of research and discussion Effect of peppermint oil on pregnant women with pruritus (itching) in the third trimester at BPS Nurhasannah, S.Tr.Keb Gulf Betung Selatan Bandar Lampung it can be concluded as follows:

1. The average distribution before peppermint oil is given at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung is 4.67 with a standard deviation of 1,234.

2. The average distribution after being given peppermint oil at BPS Nurhasannah, S.Tr.Keb Teluk Betung Selatan Bandar Lampung is 2.93 with a standard deviation of 1,223.

3. There is influence of peppermint oil to overcome pruritus (itching) in third trimester pregnant woman at BPS Nurhasannah, S.Tr.Keb Tekuk Betung Selatan Bandar Lampung. With result of T test analysis (p-value 0,000 (p <0,05) which means Ho refused and Ha accepted.

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**PERCIEVED STRESS AND SYNDROME DEPRESSION AMONG PRIMIGRAVIDA WOMEN**

*Sri Wahyuni, Anies, Ariawan Soejoenoes, Suhartono Taat Putra.*

*Abstract*

*Unstable emotions are common in mothers who are unable to adjust to pregnancy, difficulty and failure to adapt during perinatal period is a stress transition. This study aims to explore association between perceived stress and depression syndrome on the third trimester of pregnancy. This study used cross sectional design, over primigravida women in the third of pregnancy. A number of 72 participants met the inclusion criteria, completed up to the analysis. The measurement of the perceived stress used PSS questionnaire and syndrome depression was measured using EPDS. Statistical analysis were done to see the correlation between variables. The study results showed the prevalence of high-perceived stress among women in this study was 75%, and the depression syndrome was 37.5% among pregnant women on the third trimester of pregnancy. Between the depression and non-depression groups, there was difference in PSS scores F=5.787 (p=0.019), and there are significant differences in EPDS scores F=122.176 (p<0.001. There is a significant relationship between perceived stress with depression syndrome in third trimester of pregnancy r= 0.386 (p <0.001). Conclusion: The higher the perceived stress is significantly correlated with the depressive syndrome in third trimester of the first pregnancy, so it is important to reduce stress during pregnancy so that the depression syndrome can be prevented.*

*Keywords: Perceived Stress, Depression Syndrome, Primigravida Women.*

**INTRODUCTION**

Unstable emotions are common in mothers who are unable to adjust to pregnancy, difficulty and failure to adapt during perinatal period is a stress transition[1,2]. The transition period in *primigravidas* (mothers who are at the first being pregnant) requires not only physical, psychological and social readiness but also an attitude of willingness to accept changes after pregnancy.

Stress is a process whereby environmental demands exceed the ability or the source of the individual to overcome it[3] which requires individuals to adapt or adapt. Stress sources are called stressors that can be derived from psychological factors, such as social relationships or life changes such as pregnancy and stressors that come from daily life problems[4]. Low rates of self-esteem and social support, residential mobility, abuse before/during pregnancy, and experiencing discrimination were significantly associated with high levels of perceived prenatal stress[5].

Physical, emotional and social changes in pregnancy can be stressors, and furthermore maternity concerns include physical changes, appearance, interpersonal relationships and how to manage it, labor, infant health and about how to care for the baby after birth, pregnant women are also at risk due to medical conditions, pregnancy complications or distress conditions[6].

Primigravida's women changed for the first time; such as physical changes, fatigue, changes in interpersonal and occupational relationships, worrying about the health and care of pregnancy; so that the women are more sensitive to emotional changes and trigger stress[6–8], so prone to syndrome depression. Increased risk of depression syndrome associated with stress, firstly motherhood, financial problems, lack of spouse support and family members, history of depression[9]. The results of studies suggest that antenatal depression and anxiety are significantly associated with feelings of distress[10], The highest odds ratio of postpartum depression were associated with husband’s drug abuse, domestic violence, woman’s

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education[11].

Several studies have found that syndrome depression affects childhood developmental disorders in the first year[12], increases the likelihood of suicide[13] and termination of breastfeeding within 6 months of postpartum[14], as well as depression mothers is less indicative of attachment, sensitivity and behavioral care of children[15].

Stress during pregnancy will cause the activation of the nervous system and other hormones, and trigger inflammation[16]. In the third trimester of pregnancy, levels of pro inflammatory cytokines increase, and they work against infection and heal wounds, however when followed by stress may increase the risk of depression, therefore third trimester pregnant women are at higher risk for depression than during the postpartum period[17].

This study aims to explore association between perceived stress and depression syndrome on primigravida women, as our assumption that there is a correlation between perceived stress and depression syndrome in the third trimester of first pregnancy.

**METHODS**

This study used cross sectional design to investigate the correlation between perceived stress and depression syndrome. The respondents in this study were on the third trimester of pregnancy (TM III) (27–36 weeks gestation) in sixth health centers of Klaten city. We applied the following inclusion criteria: normal third-trimester pregnant women who wish to give birth vaginally and can read and write in Bahasa. The participants who were on treatment for the depression syndrome were excluded from the study. Eligible participants of 72 pregnant women on TM III met the inclusion criteria, completed until the end of the study period and up to the analysis.

The permission was asked to the health center, and then, based on the recommendation of midwives, participant recruitment was conducted. Researchers explained the research objectives, benefits and consequences orally and written to the participants and to provide participants the opportunity to decide on participation in the study.

The perceived stress and syndrome depression have been be examined at the TM III of pregnancy. Perceived stress is translated into psychological responses by using a Perceived Scale Stress (PSS) questionnaire to measure how far pregnant women feel unpredictable, uncontrollable and stress-free stressors overload)[18]. The authors used the Perceived Stress Scale/PSS[19]; is used to measure the extent to which situations in a person's life are rated as stress, and also to measure stress during pregnancy; comprised 10 items, each item was rated on a 5-point scale ranging from never (0) to almost always (4). Higher scores indicated higher levels of perceived stress. A score of greater than 13 was chosen to indicate a high level of perceived stress[18]. Syndrome depression was measured by the EPDS[20], that have been translated into Bahasa[21], comprised 10 items, choice answers should have one according to gradation of maternal feeling you get the moment. A score of greater than 10 as indicated as a depression[20]. Test results on PSS instruments showed that 10 items have Cronbach Alpha 0.702 and EPDS instruments showed Cronbach Alpha value of 0.759; indicated values greater than the minimum correlation coefficient (0.3) that were considered valid.

Data collection has been helped by 6 midwife enumerators that have equality of perception by following trainings.

Ethical clearance was obtained from the Ethics Commission on Health and Medicine

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Research at the Faculty of Medicine Diponegoro University and Kariadi Hospital. All participant was signed the informed consent in Bahasa.

Our research design was to see prevalence of the perceived stress and depression syndrome, test the difference in perceived stress to depression syndrome and to correlate the results of PSS with those of EPDS in the third trimester of pregnancy. The significance differences in this study was determined with p value <0.05.

**RESULTS AND DISCUSSION**

The mean age of the women was 23.49 years (±3.43) and all the women were married. The prevalence of high-perceived stress and depression are shown in table 1 and table 2. Among these 72 pregnant women, 18 (25%) reported low perceived stress, and 54 (75%) reported high levels of perceived stress. A comparison of the demographic characteristics of the women in the high- and low–perceived stress groups is presented in Table 1.

Most pregnant women with high levels of the perceived stress were on range age 20-35 years (93%), had secondary school education (72%), as not working women (69%), has always family support (76%), had a family income of less than the minimum regional wage per month (57%). Results show that low-perceived stress were on range age 20-35 years (94%), had secondary school education (83%), as not working women (67%), has always family support (89%), had a family income of less than the minimum regional wage per month (61%). Differences between the groups were noted in age, category of work and family income, and through statistical analysis it was shown that these differences did not occur by chance.

Table 1: Comparison of Demographic Characteristics between Women with High–Perceived Stress and Low–Perceived Stress.

Characteristics

High–Perceived Stress (n=54)

Low–Perceived

Stress (n=18) Chi SquareFisher's

n % n %

Age, years:

Exact

< 20 4 7 1 6 0.032 0.789 20-35 50 93 17 94

Education:

Elementary 8 15 3 17 Secondary 39 72 15 83 Tertiary 7 13 0 0 Status of work:

0.186 0.274

Work 17 31 6 33 0.017 0.884 Not Working 37 69 12 67

Support:

Occasionally 1 2 0 0 Often 12 22 2 11 Always 41 76 16 89

0.142 0.478

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Family Income:

>MRW\* 23 43 7 39 0.033 0.783 < MRW\* 31 57 11 61

\*MRW: Minimum regional wage

These pregnant women categorized as non-depression 45 (63%) and as depression 27 (35%). A comparison of the demographic characteristics of the women in the depression and non-depression groups is presented in Table 2. Most pregnant women as the depression were on range age 20-35 years (93%), had secondary school education (74%), as not working women (63%), has always family support (63%), had a family income of less than the minimum regional wage per month (52%). Results show that the pregnant women as non

depression were on range age 20-35 years (93%), had secondary school education (76%), as not working women (71%), has always family support (89%), had a family income of less than the minimum regional wage per month (62%). Differences between the groups were noted in age and through statistical analysis it was shown that these differences did not occur by chance.

Table 2: Comparison of Demographic Characteristics Between depression Women and non depression women

Characteristics

Depression (n=27)

Non-depression

(n=45) Chi SquareFisher's

n % n %

Age, years:

Exact

< 20 2 7 3 7 0.014 0.905 20-35 25 93 42 93

Education:

Elementary 5 19 6 13 Secondary 20 74 34 76 Tertiary 2 7 5 11 Status of work:

0.086 0.763

Work 10 37 13 29 0.084 0.473 Not Working 17 63 32 71

Support:

Occasionally 1 4 0 0 Often 9 33 5 11 Always 17 63 40 89 Family Income:

0.305 0.025

>MRW\* 13 48 17 38 0.101 0.388 < MRW\* 14 52 28 62

\*MRW: Minimum regional wage

The comparison between the two groups of depression for the PSS score and the EPDS

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score are shown in table 3. The PSS score was compared between the depression and non depression groups. The PSS mean score of depression group was 18.15 and non- depression was 15.96, distribution value F=5.787 (>3,554), Confidence Interval (CI) 95% does not exceed 1 and significant value (p) =0.019. So it can be concluded that there are differences in the PSS scores in the depression and non-depression groups.

Table 3. Comparison of mean the PSS scores and the EPDS scores with depression.

Depression (n=27)

Non-depression

(n=45) F *p*

M SD (CI) M SD (CI)

PSS Score 18.15 3.645

(16.71-19.59) 15.96 3.802

(14.81-17.10) 5.787 0.019

EPDS Score 12.56 2.592

(11.53-13.58) 6.09 2.285

(5.40-6.78) 122.176 <0.001

The EPDS mean score of depression group was 12.56 and non-depression was 6.09, and distribution value F=122.176 (>3,554), Confidence Interval (CI) 95% does not exceed 1 and significant value (p) <0.001 as shown on table 3. So it can be concluded that there is significant difference in the EPDS scores in the depression and non-depression groups.

Based on the last analysis, it obtained the correlation on the Pearson Correlation 0.386, that there is a significant relationship between perceived stress with depression syndrome in third trimester of pregnancy (p <0.001). So it can be interpreted that the correlation between the perceived stress and the depression syndrome is a directly proportional, that the higher the perceived stress of pregnant women the higher the syndrome of depression.

The prevalence of high-perceived stress among women in this study was 75%, and the differences between the groups were noted in age, category of work and family income (<0.05). Previous study found that low rates of self-esteem and social support, residential mobility, abuse before/during pregnancy, and experiencing discrimination were significantly associated with high levels of perceived prenatal stress[5]. Thus the results of this study add to the study of theories about factors associated with perceived stress during TM III of pregnancy.

This study revealed the prevalence of depression syndrome in TM III of pregnancy of 37.5%, and the differences between the groups were noted in age (<0.05). Previous study results showed the syndrome depression associated with stress, firstly motherhood, financial problems, lack of spouse support and family members, history of depression[9], and the highest odds ratio of postpartum depression were associated with husband’s drug abuse, domestic violence, woman’s education[11]. This study, confirms previous findings of syndrome depression on postpartum women, in which that study proved the influential factors of postpartum depression were occupational and family support[22]. Thus the results of this study add to the study of theories about factors associated with the syndrome depression during TM III of pregnancy.

Furthermore, to our knowledge our study is the first to explain correlation between perceived prenatal stress and syndrome depression on the third trimester among primigravida women. This sample of primigravida women, prone to suffer from stress as them changed for

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the first time; such as physical changes, fatigue and decreased hormones, changes in interpersonal and occupational relationships, worrying about the health and care of infants; so that mothers are more sensitive to emotional changes and trigger stress [6,23].

Stress during pregnancy will cause the activation of the nervous system and other hormones, and trigger inflammation[16]. In the third trimester of pregnancy, levels of pro inflammatory cytokines increase, and they work against infection and heal wounds, however when followed by stress may increase the risk of depression, therefore third trimester pregnant women are at higher risk for depression than during the postpartum period[17].

One of the objectives of our present study was to test the correlation between perceived stress and depression syndrome on the third trimester of pregnancy. However when the PSS score was compared between the depression and non-depression groups, the depression group had higher the PSS mean scores. So too for EPDS score, the depression group had significantly higher the EPDS mean scores. The existing study showed the stress is a correlation between maternal stress levels and depressive symptoms[24]. Our results show that there was a strong association between perceived stress and depression syndrome.

Although this study found evidence in support of previous research on prevalence of the perceived stress and the depression syndrome on the third trimester of pregnancy, as well as its correlation there are some limitations to the investigation which deserve mention. The most important limitation was that this was a cross sectional study, the causal role of factors cannot be inferred, and the limitation could result in recall bias which is a concern for this study in which every subjects recall them differently.

Another limitation is that the PSS and the EPDS have not been psychometrically tested and this study used translation version although it has been translated in Bahasa. Lastly, findings of this study cannot be used in generalizing to all pregnant women, because the sample for this study was drawn from Community Health Centers and do not encompassed a high proportion of pregnant women.

**CONCLUSION**

The higher of the perceived stress is significantly correlated with the depression syndrome among primigravida on the third trimester of pregnancy. These findings support the theory that the importance of reducing stress during pregnancy so that depressive syndrome can be prevented.

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DETERMINANTS OF STUNTING IN TAMBAKREJA VILLAGE, SOUTH CILACAP DISTRICT, CILACAP

*Majestika Septikasari*

*School of Health Al-Irsyad Al-Islamiyyah Cilacap, Central Java*

*majestika86@gmail.com*

ABSTRACT

Stunting not only increases the risk of children morbidity and mortality but also decreases intelligence and increases the risk of chronic diseases as adults. This study aims to analyze the influence of MUAC on early pregnancy, birth weight, birth length, EBI, number of under-five children in house and mother education on stunting This is a descriptive correlative research with cross-sectional approach conducted in Tambakreja Village, south Cilacap District, Cilacap in 2018. The number of sample was 79 children from puspa kencana integrated health service center. Data analysis was univariate and bivariate analysis with Fisher test. The results showed moderate effect between MUAC in early pregnancy (OR = 2.30; 95% CI = 0.40-13.32; p = 0.302), birth length (OR = 2.72; 95% CI = 0.26-27.99; p = 0.388) and EBI (OR = 1.74; CI95% = 0.30-10.12; p = 0.426) towards the risk of stunting. While birth weight has weak effect to stunting (OR = 1.09; 95% CI = 1.02-1.16; p = 0.724) and mother education has negative effect toward stunting (OR = 0.96; 95% CI = 0.164-5.61; p = 0.668). CED in early pregnancy, LBW, non EBI and short birth length increase the risk of stunting.

Keywords: MUAC, birth weight, birth length, breastfeeding initiation, mother education, number of children in house, stunting

**BACKGROUND**

One of the nutritional problems of children in Indonesia is the high prevalence of stunting. Stunting is chronic malnutrition condition that seen based on anthropometric indicators of the height of body per age are less than -2 SD. Based on the results of monitoring the nutritional status of the Ministry of Health RI in 2017 as many as 29.6% of children under five in Indonesia have stunting. This figure is higher than the maximum number of stunting stipulated by WHO. According to WHO, stunting rates in a region should not exceed 20%. The incidence of stunting in Central Java is not higher than the national figure of 20.6%. However, stunting in Cilacap, one of the districts in Central Java exceeded the stunting rate of 27.2% [1]

In the short-term stunting increases the risk of children's morbidity and mortality. Stunting is associated with an increased risk of pneumonia and diarrhea infections. This is because children with stunting have lower immune levels than normal children [2]. Stunting also lead in disruption of child growth and development. Chang et al. (2010) in his research mentioned that children aged 9-24 months with stunting have lower intelligence levels and have weaknesses in hand, eye, hearing, speech and performance coordination than children who do not experience stunting [3]. The results of this study are in line with research conducted by Martorell et al. (2010) where the incidence of stunting in children is associated with the slow motor development and low-level of intelligence [4]. In addition to short-term effects, stunting also has a long-term effect of increasing the risk of chronic diseases as adults. Children with rapidly rising stunting will have a higher risk of hypertension and diabetes [5]. In the wider scale, stunting will have an impact on the economy and national development. In low cognitive levels, the risk of chronic disease in adulthood as a result of stunting in childhood will lead to decrease quality of life and productivity. Low levels of work productivity impact on low wages [6]

High stunting rates indicate a long-term or chronic deficiency in children. Stunting begins at the beginning of a conception when a young woman who is malnutrition and anemic, pregnant then becomes a mother. It is worse when the baby is not getting adequate nutrition. Black et al. suggests that malnutrition in pregnant women contributes to about 20% of maternal deaths, increasing the risk of adverse pregnancy outcomes, child mortality and stunting [7]. Chronic Energy Deficiency (CED) in pregnant women will affect the disruption of growth and development of the fetus that can increase the risk of babies who are born weighing less than 2500 grams or commonly called low birth weight (LBW).

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A study conducted by Nadiah (2014) showed that LBW infants are 2.2 times more likely to have stunting than infants without LBW [8].

Another factor that can increase the risk of stunting is the length of the body at birth. Short-term infants are 1.9 times having stunting risk than babies born with normal body length [9]. Stunting is directly affected by adequate nutrition intake. In the early days of birth, baby only requires breast milk to sufficient the nutritional needs. Pre-lactal feeding may lead to non-fulfillment of infant nutrition that may result in stunting risk. The study conducted by Muchina & Waithaka (2010) stated children who get pre-lactal food 1.8 times more are at risk of stunting. The number of children in the family and the mother's education also contribute to the stunting. Research conducted by Aryu showed the results of the number of children is more than two four times greater risk of stunting compared with families with children less than two. Mothers with low education 1.5 times are more likely to have stunting children than well-educated mothers [10]. This study aims to analyze the influence of mother's upper arm circumference (MUAC) on early pregnancy, birth weight, birth length, early breastfeeding initiation (EBI), number of under-five children in house and mother education on stunting in Tambakreja village, South Cilacap district, Cilacap

**METHOD**

This is a descriptive correlative research with cross-sectional approach conducted in Tambakreja Village, south Cilacap District, Cilacap in 2018. The population of this research is all children under five in Tambakreja Village. The number of sample was 79 children from puspa kencana integrated health service center. The sample determination was based on the consideration of the representation of the population and the region with the most wasting children (15%) in Tambakreja village. Wasting is an indicator of acute malnutrition while stunting is chronic malnutrition and both are often correlated [1]. The samples were taken from children who were not sick or diarrhea and had Mother Children Health (MCH) books which contained maternal education data, MUAC on early pregnancy, newborn weight and birth length. Data of children nutrition status was compared by the nutritional status table of the Ministry of Health RI divided into two categories, normal if height/age 2 SD to -2 SD and stunting if height/age -2 SD to -3 SD. The children’s age was calculated based on the date of birth up to the time of examination. MUAC early pregnancy is divided into two categories normal ≥ 23.5 cm and CED <23.5 cm. Birth weight is divided into normal categories 2500-4000 gr and BLW <2500 gr. The birth length is divided into normal > 46 cm and short <46. Maternal education is high if the mother has a minimum high school education or equal, and it is low if the maximal education of junior high school or equal. EBI history data and the number of under-five children at home were obtained through questionnaires. Data analysis performed include univariate and bivariate analysis with Fisher test and the size of influence seen by the value of OR. Presentation of data in the form of tables presented by narration

**RESULT**

Table 1 Frequency distribution

Variabel n % **Independen Variabel**

MUAC

a. CED 38 48.1 b. Normal 41 51.9 Birth Weight

a. LBW 4 5.1 b. Normal 75 94.9 Birth Leght

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a. Short 6 7.6 b. Normal 73 92.4 EBI

a. No EBI 43 54.4 b. EBI 36 45.6 Number of Children in

House

a. >1 20 25.3 b. 1 59 74.7 Mother education

a. Low 27 34.2 b. High 52 65.8 **Dependen Variabel**

Children nutriotion status

a. Stunting 6 7.6 b. Normal 73 92.4

The research result of stunting determinant in Tambakreja village, south Cilacap district, Cilacap can be seen in table 1. Based on table 1 as many as 7.6% of sample is stunting. Children who were born from mother with CED in pregnancy and without CED in pregnancy almost balanced that is 48.1% and 51.9%. Most of the samples were born with 2500 - 4000 gr weight 93.7%. There were only 5.1% of samples have low birth weight and 7.6% have short birth length. As many as 54.4% of children without EBI shortly after birth. The number of children under five indicates that most of them have only one toddler in the house (74.7%) and the majority of mother education is high school or equal 56.8%).

Table 2 Bivariate analysis

Children nutrition status

CI (95%)

Independen Variabel

Stunting Normal Lower p

OR

Upper

n % n % limit

limit

**MUAC** 2.30 0.40 13.32 0.302 CED 4 5,1 34 43

Normal 2 2.5 39 49.4

**Birth Weight** 1.09 1.02 1.16 0.724 LBW 2 2.5 3 3.8

Normal 4 5.1 70 88.6

**Birth lenght** 2.72 0.26 27.99 0.388 Short 1 1.3 5 6.3

Normal 5 6.3 68 86.1

**EBI** 1.74 0.30 10.12 0.426 No EBI 4 5.1 39 49.4

EBI 2 2.5 34 43

**Number of Children in**

**House**

>1 3 3.8 17 21.5 1 3 3.8 56 70.9

3.29 0.61 17.85 0.162

**Mother education** 0.96 0.164 5.61 0.668 Low 2 2.5 25 31.6

High 4 5.1 48 60,8

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Table 2 shows a weak influence between the birth weight (OR = 1.09; 95% CI = 1.02-1.16; p = 0.724) to stunting where children born with LBW were 1.09 times more likely to have stunting than children born without LBW. The maternal education variable (OR = 0.96; 95% CI = 0.164-5.61; p = 0.668) had an adverse (negative) effect on the risk of stunting and the effect was not statistically significant. There was a moderate effect between MUAC in early pregnancy (OR = 2.30; 95% CI = 0.40-13.32; p = 0.302), birth length (OR = 2.72; 95% CI = 0.26-27.99; p = 0.388) and EBI (OR = 1.74; CI95% = 0.30-10.12; p = 0.426) towards the risk of stunting. Mothers who at the early pregnancy experience CED will increase the risk of stunting in children by 2.3 times compared to mothers who are not have CED in early pregnancy. Children who are at birth have a body length <46 cm have more risk of stunting 2.7 times than children who are born with normal body length. The risk of stunting a toddler will increase 1.7 times greater in children who do not do EBI shortly after birth. The number of under five at home has a strong influence on the risk of stunting incidence in toddlers (OR = 3.29; CI95% = 0.61-17.85; p = 0.162). Children who live on family with more than one toddler will be 2.3 times more likely to have stunting than children who live on family with only one toddler. Although some variables have moderate and strong effects, but the effect of MUAC in early pregnancy, birth weight, birth length, EBI, the number of under-fives in the family, and mother education on stunting risk are not statistically significant.

**DISCUSSION**

The CED in early pregnancy can be known by measurement of MUAC which is less than 23.5 cm. CED in pregnancy will affect the disruption of trasplasenta transport that reduce blood flow to the placenta and the nutritional needs of the fetus cannot be maximum fulfilled resulting in disruption of fetal growth. [12] Mothers with CED will be at risk of delivering LBW infants. Children born with LBW, have a chance of having a nervous system disorder so the growth and development will be slower than children born with normal weight. [7] A study conducted in Kwara State, Nigeria found that stunting opportunities would decrease in mothers with better nutritional status during pregnancy compared to mothers with malnutrition status. [13]

Normally newborns weigh between 2500 - 4000 grams. Babies born more than 4000 grams are called big babies, and it is called LBW if the baby is born less than 2500. LBW infants are more susceptible to infectious diseases. If there are not supported by adequate nutrition then the risk of stunting in the future will be greater. [14] Based on the results of the study of children born LBW show risk 1.09 times greater stunting than children born normal. The results of this study are consistent with studies conducted in Dhaka-Bangladesh where children with a history of LBW will have a greater

chance of having stunting than a toddler without a history of low birth weight. [15] The study was similar to the study conducted in Brazil, the history of LBW was significantly associated with under-nutrition, stunting and wasting in infants. [7]

The birth length shows the baby's growth during the womb. Short length infants show less nutritional state due to lack of energy and protein during pregnancy. The results showed that children who have short birth length <46 cm will be at risk of stunting 2.7 times greater than toddlers born with normal birth length. The results of this study are in line with research conducted by Meilyasari and Ismawati (2014) and Anugraheni (2012) in Pati indicates that the risk of stunting is higher among children under five with short birth length (<48 cm). [16] The risk of developing growth disorders is greater in children who have growth disorders in the previous stage. So that short birth length children are at higher risk of experiencing short at the next age.

The risk of stunting will increase 1.7 times greater in children who do not EBI shortly after birth. The first hour of a baby's life is the best time for a baby to learn breastfeeding. Skin contact between infants and mothers during this period increases the chances of the baby being able to suckle in the first hours of life and in the long run. [17] Children who do not do EBI will have difficulty experiencing at the time of breastfeeding that causes many parents finally give pre-lactal food. Research conducted by

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Muchina & Waithaka (2010) children who received pre-lactal food 1.8 times has more risk of stunting than children who did not get pre-lactal food. [10]

The results showed that there was a negative effect of maternal education on stunting risk. High maternal education cannot mean that mothers have a good knowledge in the fulfillment of child nutrition. This is in accordance with research conducted by M. Septikasari (2016) where in her research showed no significant relationship between maternal education level with child nutrition status.[18] Education on the one hand has a positive impact that the mother increasingly understands the importance of health care. But on the other hand, higher education also affects the changes in social values that can affect healthy lifestyles, including the consumption of unhealthy foods that can increase the risk of stunting in children.

Toddlers who live with families with more than one toddler will be 2.3 times more likely to have stunting than a toddler who living with a family with only one toddler. The number of children in the family affects the availability of family food. The large number of children in families with low economic status leads to the non-fulfillment of children's nutritional needs thus increasing the risk of stunting. [19] The number of children in the family effects the available resources, the number of infants in the family can also increase the risk of transmission of infectious diseases that in the long term can result in stunting. The number of infants more than one in the family causes the mother to have difficulty in dividing the time in parenting

**CONCLUSION**

The results showed moderate effect between MUAC in early pregnancy (OR = 2.30; 95% CI = 0.40-13.32; p = 0.302), birth length (OR = 2.72; 95% CI = 0.26-27.99; p = 0.388) and EBI (OR = 1.74; CI95% = 0.30-10.12; p = 0.426) towards the risk of stunting. While birth weight has weak effect to stunting (OR = 1.09; 95% CI = 1.02-1.16; p = 0.724) and mother education has negative effect toward stunting (OR = 0.96; 95% CI = 0.164-5.61; p = 0.668).

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***RELATED FACTORS WITH HIGHLY PREECLAMPSIA EVENTS IN PREGNANT WOMAN AT DR. ADJIDARMO DISTRICT LEBAK BANTEN PROVINCE IN 2016***

***Nurul Husnul Lail, Aulia Restiani***

***Abstract***

*According to WHO 2014 AKI 289,000 people, in 2016 in Indonesia the number of maternal deaths 4,834 cases; AKB 25,5 / 1,000 KH, in Banten Province the number of maternal deaths 253 cases and the number of infant mortality 933 cases, in Lebak District 2016 AKI 38 cases and IMR 406 cases. The incidence of severe preeclampsia in RSUD dr. Adjidarmo 2016 is 14.5%.* ***Objectives:*** *Knowledge of factors related to the incidence of severe preeclampsia in pregnant women in RSUD Dr. Adjidarmo Regency of Lebak Banten Province Year 2016.* ***Research Methods:*** *The research design used is analytical method of case control type or control case. The sample in this study amounted to 212 respondents consisting of 106 case case respondents and 106 control group respondents. Sampling technique using systematic sampling. The research instrument is secondary data. Data were analyzed using chi square statistic test.* ***Results:*** *The result of the research is the respondent who has no history of preeclampsia 63,7%, the respondent who does not have overweight before pregnant 57,5%, the respondent has 61.3% of the offspring, the respondents who do not have double pregnancy 79,2%, and the respondent do antenatal care according to standard 82.1%.*

***Keywords*** *: Severe preeclampsia, history of preeclampsia, overweight, heredity, multiple pregnancy, antenatal care.*

**BACKGROUND**

According to the report of World Health Organization (WHO) in 2014, the Mortality Rate of Mother (MRM) died of pregnancy and childbirth in the world was 289,000 people. Based on its data, the most common causes of maternal deaths in Indonesia are direct obstetric like bleeding as 28%, preeclampsi/eclampsi as 24%, and infections as 11%, whereas indirect causes are obstetric trauma as 5% and also others as 11% (WHO, 2014).

In the United States, Canada and Western Europe, the incidence of preeclampsia ranges from 2-5%. In developing countries, a woman is seven times more likely to experience preeclampsia than women in developed countries. In the African region, the incidence of preeclampsia and eclampsia reaches 4-18%, 10-25% of these cases will result in maternal death (Fatriani, 2016).

Starting in 2016, Sustainable Development Goals (SDGs) 2015-2030 is formally replaced the Millennium Development Goals (MDGs) 2000-2015 with target achievement of MRM below 70 per 100,000 live birth (LB), ending preventable infant and toddler mortality by reducing the Neonatal Mortality Rate to 12 per 1,000 LB and Toddler Mortality Rate to 25 per 1,000 LB (Sekkab RI, 2017).

Based on data from Banten Province Health Office, MRM in the year of 2014 was 230/100,000 Childbirth increasing from 2013 which was 216/100,000 LB. Infant mortality rate in 2014 was 657/1,000 LB. By 2016 the number of maternal deaths was 253 cases, and the number of maternal deaths due to hypertension in pregnancy was 75 cases, whereas the number of infant mortality in 2016 was 933 cases (Profil of Banten, 2016).

There were 70 mothers who had a history of preeclampsia in previous pregnancies and 126 mothers who did not have a history of preeclampsia in previous pregnancies (Umar *et al*, 2017). There were as many as 3 (75%) of 4 mothers with a history of preeclampsia in families with severe preeclampsia, whereas from 86 mothers with no family history of preeclampsia there were 11 (12.8%) women with severe preeclampsia (Fatmawati, 2012).

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The proportion of obesity before pregnancy was found to be 2.6 times more in preeclampsia patients at 28.2% than non-preeclampsia patient at 10.9% in Dr. M. Djamil Padang (Andriani *et al*, 2016).

Found as many as 62 respondents consist of 36 preeclampsia patients or 55.56% got Antenatal Care (ANC) repetitively (Isnanda et al, 2012). It was found that the ANC examination was closely related to the incidence of severe preeclampsia (Luo, B *and* Ma, X 2013)

In Dr. Adjidarmo District Public Hospital Lebak Regency of Banten Province at year 2016, Severe Preeclampsia was the first ranking in ten cases found in the maternity room (midwifery). The ten cases were Severe Preeclampsia (14.5%), Abortion (13.2%), History of Sectio Caesarea (SC) (12.3%), Premature Rupture of Membranes (PRP) (12.2%), Kala I Prolonged Phase (9.5%), Kala II long phase (9.2%), Placental Retention (7.8%), Breech Position (7.5%), Oligohydramnios (7.2%), and Pregnancy with Hypertency (6.6%) (Annual report, 2016).

**FORMULATION OF THE PROBLEM**

Based on the background above, then the authors formulate the problem as "What Factors Associated with Severe Preeclampsia Incidence in Pregnant Women at Dr. Adjidarmo District Public Hospital Lebak Regency of Banten Province in 2016?“.

**CONCEPTUAL FRAMEWORK**

Conceptual framework in this research consists of two variables namely dependent variable (bound) and independent variable (free). In this study, the dependent variable is the incidence of severe preeclampsia, while the independent variables are history of preeclampsia, obesity, heredity, multiple pregnancy and antenatal care.

**RESEARCH METHOD**

The research design used is analytical method of case control type or control case. Analytic is research that try to explore how and why the phenomenon happened. This research also used retrospective approach. (Notoatmodjo, 2013).

**Location and Time of Study**

The location in this study was conducted in the delivery room of Dr. Adjidarmo District Public Hospital Lebak Regency of Banten province. The study was conducted during September 2017-January 2018.

**Population and Sample**

The population in this study was all pregnant women of Dr. Adjidarmo District Public Hospital Lebak Regency of Banten province in 2016 with the number of 3,992 people.

The sample used was 106 cases and the control group was 106 people (1: 1). So the sample taken in this research was 212 people.

**Sampling technique**

Sampling technique for case group is total sampling, and for the control group is systematic sampling. Systematic sampling takes the sample systematically with a certain interval/distance from a sample frame that has been sorted (Supriyadi, 2014).

**Technique of Data Collection**

The data collected by researchers came from medical records and register books in the maternity ward of Dr. Adjidarmo District Public Hospital Lebak Regency of Banten province at year 2016 and categorize based on the variables needed in this study.

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**PROCESSING AND DATA ANALYSIS**

Data analysis in this research is done gradually that is from univariate analysis and bivariate analysis through chi square statistic test.

**Research result**

**A. Univariate Analysis**

**1. Frequency Distribution of Respondents Based on Preeclampsia History Table 4.1**

**Preeclampsia History**

**Frequency %**

Yes 77 36.3

No 135 63.7

Total 212 100

Table 4.1 shows that respondents who had a history of preeclampsia were 77 respondents (36.3%) and respondents who did not have a history of preeclampsia were 135 respondents (63.7%). **2. Frequency Distribution of Respondents Based on Obesity**

**Table 4.2**

**Obesity Frequency %**

Yes 90 42.5

No 122 57.5

Total 212 100

Table 4.2 describes that the respondents who had obesity before pregnancy were as many as 90 respondents (42.5%) and respondents who did not have obesity before pregnancy were as many as 122 respondents (57.5%).

**3. Frequency Distribution of Respondents Based on Hereditary Factors Table 4.3**

**Hereditary Factor**

**Frequency %**

Yes 130 61.3

No 82 38.7

Total 212 100

From table 4.3, it is found that respondents who had hereditary factor were as many as 130 respondents (61.3%) and respondents who did not have hereditary were as many as 82 respondents (38.7%).

**4. Frequency Distribution of Respondents Based on Multiple Pregnancy Table 4.4**

**Multiple Pregnancy**

**Frequency %**

Yes 44 20.8 No 168 79.2

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Total 212 100

From table 4.4, it is found that respondents who had multiple pregnancies were 44 respondents (20.8%) and respondents who did not have multiple pregnancies were as many as 168 respondents (79.2%).

**5. Frequency Distribution of Respondents Based on Antenatal Care**

**Table 4.5**

**Antenatal Care**

**Frequency %**

No 38 17.9

Yes 174 82.1

Total 212 100

From table 4.5, it is found that the respondents who did antenatal care below the appropriate standard were about 38 respondents (17.9%) and the respondents who did antenatal care according to the standard were 174 respondents (82.1%).

**Bivariate Analysis and Discussion**

**1. Associated of Respondent's Preeclampsia History With Severe Preeclampsia Incidence Table 4.6**

Obesity Severe Preeclampsia Total *P*

*OR 95%*

Yes No *CI*

*Value*

n % N % N %

Yes No

66 40

62.3 37.7

24 82

22,6 774

90 12 2

42.5 57.5

0.000 5.638

Total 106 100 10 6

100 21 2

100

From table 4.6, it is found that those who had a history of preeclampsia had severe preeclampsia which were 60 respondents (56.6%) and those without severe preeclampsia were 17 respondents (16%). Those who did not have a history of preeclampsia had severe preeclampsia which was 46 respondents (43.4%) and those without severe preeclampsia were 89 respondents (84%).

Result of statistical test by using Chi Square at α = 0.05 obtained value of *p* = 0.000. The value of *p* < 0.05 means that there is significant relation between history of preeclampsia with incident of severe preeclampsia on respondent.

The value of Odds Ratio (OR) 6.829 means that respondents who do not have a history of preeclampsia have a probability of 6.829 times not to experience severe preeclampsia. The results of this study concur with the research conducted by Saraswati, 2016, Faiqoh, *et al* 2014, Umar, *et al* 2017, Sutrimah et al, 2014, Schoenaker, D *et al*., 2014.

Research on various risk factors for hypertension in pregnancy/preeclampsia/eclampsia showed that one of them is history of preeclampsia in which pregnant woman who has experienced preeclampsia pregnancy history (Savitz, *et al*, 2014, Prawiroharjo, 2014, Indomedika, 2013, Maryunani, *et al*, 2012)

**2. Associated of Respondent’s Obesity with Incidence of Severe Preeclampsia Table 4.7**

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History of PE

Severe Preeclampsia Total *p Value OR 95%* Yes No *CI* N % n % n %

Ys No

60 46

56.6 43.4

17 89

16 84

77

135

36.3 63.7

0.000 6.829

Total 10 6

100 10 6

10 0

212 100

From table 4.7, it is found that respondents who had obesity before pregnancy experienced severe preeclampsia that was as many as 66 respondents (62.3%).

Result of statistical test by using Chi Square at α = 0.05 obtained value of *p* = 0.000. It can be said that with value of *p* < 0.05 there is significant relation between obesity before pregnancy with incident of severe preeclampsia on respondent.

The value of Odds Ratio (OR) 5.638 means that respondents who do not have obesity before pregnancy have a chance 5.638 times not to experience the incident of severe preeclampsia.

**3. Associated of Respondents' Hereditary Factor with Incidence of Severe Preeclampsia Tabel 4.8**

Multiple Pregnancy Severe Preeclampsia Total *p Value OR 95% CI* Yes No

N % N % N %

Yes No

38 68

35.8 64.2

6

10 0

5.7 94. 3

44 16 8

20.8 79.2

0.000 9.314

Total 106 100 10 6

10 0

21 2

100

From table 4.8, it is found that those who had hereditary factor had severe preeclampsia as many as 75 respondents (70.8%) and those who did not have severe preeclampsia were 55 respondents (51.9%). While those who did not have hereditary factor had severe preeclampsia as many as 31 respondents (29.2%) and those who did not have severe preeclampsia were 51 respondents (48.1%).

Result of statistical test by using Chi Square at α = 0,05 obtained value of *p* = 0.007. It can be said with value of *p* < 0,05 that there is significant relation between hereditary factor with incident of severe preeclampsia on respondent.

The results also showed the value of Odds Ratio (OR) was 2.243. It means the respondents who have heredity have a chance of 2.243 times to experience the incidence of severe preeclampsia.

**4. Associated of Respondents’ Multiple Pregnancy with Incidence of Severe Preeclampsia**

Hereditary Factor

Preeklampsia Berat Total *p Value OR 95% CI* Yes No

N % N % N %

Yes No

75 31

70.8 29.2

55 51

51.9 48.1

130 82

61.3 38.7

0.007 2.243

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Total 10 6

100 106 100 212 100

**Table 4.9**

From table 4.9 it is found that those who had multiple pregnancies had severe preeclampsia as many as 38 respondents (35.8%), severe preeclampsia were 68 respondents (64.2%) and those who did not have severe preeclampsia were 100 respondents (94.3%).

Result of statistical test by using Chi Square at α = 0.05 obtained value *p* = 0.00. It can be said with value of *p* < 0.05 that there is significant correlation between multiple pregnancies with incident of severe preeclampsia on respondent.

The results also show the value of Odds Ratio (OR) 9.314 means respondents who do not have multiple pregnancy have a chance of 9.314 times to not experience the incidence of severe preeclampsia. **5. Associated of Respondents’ Antenatal Care with Incidence of Severe Preeclampsia Table**

ANC Severe Preeclampsia Total *p Value OR 95% CI* Yes No

N % N % n %

**4.10**

Yes No

23 83

21.7 78.3

15 91

14.2 85.8

38

174

17.9 82.1

0,210 1,681

Total 106 100 106 100 212 100

From table 4.10, it is found that respondents did antenatal care without appropriate standard had severe preeclampsia as many as 23 respondents (21.7%) and those without severe preeclampsia were 15 respondents (15.2%). While respondents did antenatal care according to the standard experienced severe preeclampsia as many as 83 respondents (78.3%) and who did not experience severe preeclampsia were as many as 91 respondents (85.8%).

The result of statistical test by using Chi Square with value *p* > 0.05 showed that there is no significant correlation between antenatal cares with severe preeclampsia incident on respondent.

**CONCLUSIONS**

There was incident of severe preeclampsia of pregnant women in dr. Adjidarmo District Public Hospital Lebak Regency of Banten Province at year 2016 as many as 14.5%.

Based on statistical test, there was a significant correlation between preeclampsia history (*p* = 0.000, OR = 6.829), obesity (*p* = 0.000; OR = 5.638), heredity (*p* = 0.007; OR = 2.243), and multiple pregnancy (*p* = 0.000; OR = 9.314) with severe preeclampsia events.

Whereas with antenatal care (*p* = 0.210), there was no significant relationship with severe preeclampsia incident.

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***THE EFFECT OF TEMU PUTIH (CURCUMA ZEDOARIA) THERAPY TO FLUOR ALBUS IN WOMEN OF REPRODUCTIVE IN PRIVATE MIDWIFERY CLINIC OF MRS “S” MIDWIFE ON 2017***

***Risza Choirunissa, Andi Julia Rifiana***

***Fakultas Ilmu Kesehatan Universitas Nasional***

***risza.choirunissa@gmail.com***

**ABSTRACT**

*Temu Putih (Curcuma zedoaria) one of the many traditional medicinal plants in Indonesia. One is the use of it as a cure whitefluor albus. Fluor albus from the vagina besides blood and clinical manifestations of infections which causes irritation. Whitish marked with color, consistency of fluid, itching, odor, amount of expenditure. The situation is caused by various factores, including unhealthy habits, particular disease, and infected with microorganisms. Temu Putih is contains asiri oil and curcumin which is efficacious as antimicrobial and antifungal. The purpose of this study was to investigate the effect of Temu putih therapy to fluor albus in women of reproductive inclinical of Mrs “S” midwife on 2017. Design of the study is quasi experiment for pretest - posttest nonequivalent control group. The population in this study were all women who experienced fluor albus amounted to 65 womens. The sampling were 40 womens of reproductive with fluor albus pathology from inclusion and exclusion criteria. Get group A were 20womens as intervention group and group B were 20 womensas control group. The Technique of analysis showed that using independent t-test (α 0,05). The result was showed the effect of Temu Putih (Curcuma Zedoaria) therapy tofluor albus in women of reproductive inclinical of Mrs “S” midwife on 2017. Obtained tcount > ttable with p = 0,000 < 0,05. Conclusions of this study is the more routine to consume Temu Putih then the more healed fluor albus. Suggestions for the study, so that the clinical of Mrs “S” midwifegiving health education about benefits of Temu Putih (Curcuma zedoaria) and application to therapy fluor albus.*

*Keywords : Fluor albus, Temu putih (Curcuma zedoaria)*

**PRELIMINARY**

Women are generally susceptible to reproductive organ disorders because female genital organs are directly related to the outside world through copulation, cervical tract, uterine space, fallopian tubes that empty into the abdominal space. This direct connection can lead to infection on the outside that continues into the abdominal space (Aisyaroh, 2016).

Reproductive health disorders in women who usually complained of is fluorine albus. Fluor albus is a pervaginam fluid rather than blood and is a clinical manifestation of infections that can wet and irritate, itch, and sense of security in people who experience it (Manuaba, 2009).

According to the World Health Organization (WHO) about 75% of women in the world experience vaginal discharge at least once in life, and 45% experience the incidence as much as two or more lifetimes (Bahari, 2012). In Asia about 76% (Setiani, et al, 2014). Indonesian women alone more than 70% experience discharge caused by fungi and parasites. This figure differs sharply with Europe which is only 25% just because of the humid weather in Indonesia so easily infected with Candida albicans fungus which is one cause of leucorrhea (Bahari, 2012).

Fluor albus is one of the causes that can be triggered by Sexually Transmitted Infections (STIs). The number of STI cases recorded by Banten Provincial Health Profile data in 2012 was 2,265 women with STIs compared with the number of men who only 803 inhabitants. Tangerang Selatan is one of the most common cases of STIs in women with 259 IMS. Year 2013 based on Health Profile of City Health Office of South Tangerang recorded 263 people suffering from STI and other illness (Dinkes Tangerang Selatan, 2013). Until 2015 cases of Sexually Transmitted Infections (STI) in Banten Province recorded 9,187 inhabitants and South Tangerang City it self as many as 324 people (BPS Banten, 2016). The research study of whiteness conducted on high school students in South Tangerang City in 2015 with primary data collection methods and distributed questionnaires obtained from 1029 respondents, all students (100%) have experienced whiteness with physiological discharge as many as 481 people (46.7%) and who experienced pathological vaginal discharge as much as 548 people (53.3%) (Adawiyah, 2015). As a result of pathological albus fluoritis resulted in early symptoms of cervical cancer which is the number one killer for women and leads to death (Nurhayati, 2013).

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Based on data from DEPKES RI (2014), the incidence of cervical cancer 17 per 100,000 women, inpatient cases for cervical cancer 12,8% or 5,349 cases. For the province of Banten the number of cervical cancer patients from year to year continues to increase. Recorded 116 people have cervical cancer. Generally, those affected by the disease are housewives (Sabarudin, 2015).

Preliminary studies that have been done by researchers in the Practice Midwife Mandiri (BPM) Ny "S", the average who often seek treatment because fluorine albus is teenagers, pregnant women and acceptor KB. Year 2016 data obtained as many as 58 people experiencing fluorine albus. In January to March of 2017 data were obtained about 65 people with albus fluorine, physiologic albino fluorine 25 people (38.46%) and 40 people (61.53%) had pathophysial albus albus. Interviews of researchers with some women who experienced 24 albus fluorine with albusfisiologic fluorine 9 people (37.5%) while pyromathy 15 people (62.5%). Mean causes other than family planning acceptors also lack of genital hygiene and use of vaginal cleansing soap. It appears that reproductive health problems in women still need attention.Handling fluorine albus can also realize the movement of the program back into nature or back to nature.

The research study on the handling of whiteness by using turmeric boiled water obtained results that of 28 female teenage respondents who experienced whiteness after being given boiled water, whitish experience was changed to light as much as 16 people, and still experience whitish is as much as 6 people. Meanwhile, respondents who previously experienced a vaginal discharge, turned into a whitish as much as 2 people, and still experience severe whiteness as much as 4 people. This result is evidenced by asymp sig (p) value of 0.000 smaller than 0.05 (Ridhowati, 2011).

Fluor albus can also be cured with herbal medicine that can be reached by the community in this case "White Curcuma zedoaria" processed traditionally and valuable for whitening cure (Suranto, 2001). Based on the above background the authors are interested to know the effect of White Ginger therapy (Curcuma zedoaria) on albus fluorine in women of reproductive age in Midwife Practice Mandiri Ny "S" in 2017.

**METHOD**

This research is quantitative research. The researchers used quasi experimental design with pretest-posttestnonequivalent control group type, ie there were two groups of subjects that were not randomly selected, the treated group and the control group. The population in this study were all women of reproductive age who experienced fluorine albus which amounted to 65 women. Sampling is based on the inclusion and exclusion criteria of the population. A sample of 40 women comprised of group A as group of intervention (experiment) and group B as group of Control. The research was conducted from April to May 2017 which was located at Bidan Practice Mandiri Ny "S" in East Ciputat Subdistrict, Tangerang City South of Banten Province.

**RESULT**

A. Univariate Analysis

**Table 5.1**

**Distribution of pathologic fluorine albus frequency from group A (intervention as case group) and group B (not intervention as control group) before (pretest) White Ginger therapy (Curcuma zedoaria)**

*Pretest Frequency Percentage*

*(%)*

*Group A 20 50,0*

*Group B 20 50,0*

*Total 40 100,0*

Source: SPSS 21 is processed in 2017

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The Effect Of Temu Putih (Curcuma Zedoaria) Therapy… 

Based on table and figure 5.1 frequency before (pretest) of Curcuma zedoaria therapy 40 (100,0%) respondents experienced pathophysius fluoric fluoric. Pathophysius fluorine albus frequency from group A (intervention as case group) was 20 (50,0 %) and group B (not intervention as control group) as much as 20 (50.0%).

***Tabel 5.2***

***Distribution of pathologic fluorine albus frequency from group A (intervention as case group) after posttest of White Ginger therapy (Curcuma zedoaria)***

*Posttest Frequent (%)*

*Not cured 2 10,0*

*Cured 18 90,0*

*Total 20 100,0*

Source: SPSS 21 is processed in 2017



Based on the table and figure 5.2 pathologic pathophysial fluorine distribution from group A (intervention as case group) after posttest of Curcuma zedoaria therapy, from 20 respondents of the intervention group obtained the result of 2 (10,0%) respondents did not recover and 18 (90.0%) respondents recovered. There is a rise in curve to the right.

**Tabel 5.3**

***Distribution of pathologic fluorine albus frequency from group B (not intervention as control group) after posttest of White Ginger therapy (Curcuma zedoaria)***

*Posttest* Frequent (%)

Tidak sembuh Sembuh

20 0

100,0 0,0

Total 20 100,0

Source: SPSS 21 is processed in 2017

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Based on the table and figure 5.3 pathophysius pathophysial fluorine distribution from group B (not intervention as control group) after posttest of Curcuma zedoaria therapy, from 20 control group respondents obtained the result of 20 (100%) respondents did not recover or still experience Fluorine pathologic albus and cure is 0 (0,0%).

**Table 5.4**

***The average value of pretest of color indicator, consistency of fluid, odor, itch, total expenditure, tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Mean

Indicator

Tcount Ttable

Group

A

Group B

Color 1,15 1,15 0.000 Consistency of fluids 1,15 1,15 0.000 Smell 1,15 1,15 0,000 Itchy 1,15 1,15 0,000 Total expenses 1,15 1,15 0,000

Source: SPSS 21 is processed in 2017

2,024

Based on Table 5.4, the average value of pretest color, consistency of fluid, itching, odor, amount of expenditure in group A (intervention as case group) and group B (not intervention in control group) is equal to tcount <0.000 <2.024) . Then it is concluded that the pretest results have not or have no effect of white intersection (Curcuma zedoaria) against albus fluorine in women of reproductive age.

**B. Bivariate**

**Table 5.5**

Mean (Group)

Indicator

A BTcount Ttable

Color 1,15 1,15 0.000

Consistency of fluids

1,15 1,15 0.000

2,024

Smell 1,15 1,15 0,000 Itchy 1,15 1,15 0,000 Total expenses 1,15 1,15 0,000

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***The “mean” values of posttest color indicator 1, 2,3, and 4, tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Color

Mean

(Group) Tcount Ttablr A B

P α

*Posttest 1* 1,40 1,15 1,798

0,081

*Posttest 2* 1,80 1,15 5,284 0,000 0,05

2,024

*Posttest 3* 1,85 1,15 6,042 0,000

*Posttest 4* 1,90 1,15 7,010 0,000

Based on table 5.5, the mean posttest 1 (1st week) of the intervention group is 1.40 and the posttest average of 1 control group is 1.15. From the table is known titung amounted to 1.798 with significant 0,081. Obtained ttable of df 38 at 5% significant level is 2.024. So the tcount <ttable (1,798 <2,024) and the significance value is greater than 0.05 (p = 0.080> 0.05). Then it can be said that there is no significant influence on posttest 1 (1st week) color.

Whereas in posttest 2 the average value increased to 1.80 for group A (intervention group) and 1.15 for group B (control group). The result of tcount> ttable (5,284> 2,024) and its significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there began to be a significant influence on posttest 2 (week 2) color.

In posttest 3 the mean scores for group A (intervention group) increased by 1.85 and 1.15 for group B (control group). The tcount> ttable (6.042> 2.024) and the significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 3. In posttest 4 the mean score for group A (intervention group) increased again to 1.90 more than group B (control group) whose mean value remained at 1.15. Tresult > Ttable (7.010> 2.024) and the significance value is less than 0.05 (p = 0,000 <0.05). Then it can be said that there is a significant influence on posttest 4 (week 4) color.

***Table 5.6***

***The mean value of posttest fluid consistency indicator 1,2,3, and 4, tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Consistency of fluids

Mean (Group) A B

Tcount tttable

P α

*Posttest 1* 1,40 1,15 1,798

0,081

*Posttest 2* 1,65 1,15 3,658 0,001 0,05

2,024

*Posttest 3* 1,75 1,15 4,660 0,000

*Posttest 4* 1,90 1,15 7,010 0,000

Based on Table 5.6, the mean posttest 1 (1st week) of the intervention group is 1.40 and the posttest average of 1 control group is 1.15. From the table is known titung amounted to 1.798 with significant 0,081. The value of t count <ttable (1,798 <2,024) and its significance value greater than 0.05 (p = 0.080> 0.05). Thus it can be said that there is no significant influence on posttest 1 (week 1) of fluid consistency.

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While in posttest 2, the average value increased to 1.65 for group A (intervention group) and 1.15 for group B (control group). The result of tcount> ttable (3,658> 2,024) and its significance value is less than 0.05 (p = 0.001 <0.05). So it can be said that there began to be a significant influence on posttest 2 (2nd week) of fluid consistency.

In posttest 3 the mean scores for group A (intervention group) increased by 1.75 and 1.15 for group B (control group). The tcount> ttable (4,660> 2,024) and the significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 3 (week 3) of fluid consistency. Posttest 4 averaged values for group A (intervention group) increased again to 1.90 more than group B (control group) whose mean value remained 1.15. The result of tcount> ttable (7.010> 2.024) and its significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 4 (week 4) of fluid consistency.

***Table 5.7***

***The mean values of posttest odor scent 1,2,3, and 4, tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Bau

Mean (Kelompok) A B

thitung ttabel

P α

*Posttest 1* 1,35 1,15 1,463

0,152

*Posttest 2* 1,70 1,15 4,127 0,000 0,05

2,02

4

*Posttest 3* 1,75 1,15 4,660 0,000

*Posttest 4* 1,90 1,15 7,010 0,000

Based on Table 5.7, the mean posttest 1 (1st week) of the intervention group is 1.35 and the posttest average of 1 control group is 1.15. From the table is known t count equal to 1,463 with significant 0,152. The tcount <ttable (1,463 <2,024) and the significance value is greater than 0.05 (p = 0.152> 0.05). Then it can be said that there is no significant influence on posttest 1 (week 1) smell.

Posttest 2 increased the average value to 1.70 for group A (intervention group) and 1.15 for group B (control group). The result of tcount> ttable (4.127> 2.024) and its significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there began to be a significant influence on posttest 2 (week 2) smell.

In posttest 3 the mean scores for group A (intervention group) increased by 1.75 and 1.15 for group B (control group). The tcount> ttable (4,660> 2,024) and the significance value is less than 0.05 (p = 0,000 <0.05). Then it can be said that there is a significant influence on posttest 3 (week 3) odor. In posttest 4 the mean score for group A (intervention group) increased again to 1.90 more than group B (control group) whose mean value remained at 1.15. The result of tcount> ttable (7.010> 2.024) and its significance value is less than 0.05 (p = 0,000 <0.05). Then it can be said that there is a significant influence on posttest 4 (week 4) smell.

***Table 5.8***

***The mean score of posttest itching indicator 1,2,3, and 4, the tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Itchy

Mean (Group) A B

Tcount Ttable

P α

*Posttest 1* 1,20 1,15 0,406

0,687

*Posttest 2* 1,70 1,15 4,127 0,000 0,05

2,024

*Posttest 3* 1,70 1,15 4,127 0,000

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*Posttest 4* 1,80 1,15 5,284 0,000

Based on Table 5.8, the mean posttest 1 (1st week) of the intervention group is 1.20 and the posttest average of 1 control group is 1.15. From the table is known thitung of 0.406 with significant 0.687. The value of t count <ttable (0,406 <2,024) and its significance value greater than 0,05 (p = 0,687> 0,05). So it can be said that there is no significant effect on posttest 1 (week 1) itching.

Whereas in posttest 2 the average value increased to 1.70 for group A (intervention group) and 1.15 for group B (control group). The result of tcount> ttable (4.127> 2.024) and its significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there began a significant influence on posttest 2 (week 2) itching.

In posttest 3 the mean values for group A (intervention group) remained 1.75 and 1.15 for group B (control group). The tcount> ttable (4,660> 2,024) and the significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 3 (week 3) itching. In posttest 4 the mean score for group A (intervention group) increased again to 1.80 times greater than group B (control group) whose mean value remained 1.15. The result of tcount> ttable (5,284> 2,024) and its significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 4 (week 4) itchy.

***Table 5.9***

***The mean value of the indicator of posttest expenses 1,2,3, and 4, the tcount and ttable value with 95% confidence interval from group A (intervention as case group) and group B (not intervention as control group)***

Total Expenses

Mean (Group) A B

Tcount Ttable

P α

*Posttest 1* 1,35 1,15 1,463

0,152

*Posttest 2* 1,60 1,15 3,236 0,003 0,05

2,02

4

*Posttest 3* 1,65 1,15 3,658 0,001

*Posttest 4* 1,85 1,15 6,042 0,000

Based on Table 5.9, the mean posttest 1 (1st week) of the intervention group is 1.35 and the posttest average of 1 control group is 1.15. From the table is known t count equal to 1,463 with significant 0,152. The tcount <ttable (1,463 <2,024) and the significance value is greater than 0.05 (p = 0.152> 0.05). So it can be said that there is no significant influence on posttest 1 (week 1) the amount of expenditure.

Whereas in posttest 2 the average value increased to 1.60 for group A (intervention group) and 1.15 for group B (control group). The result of tcount> ttable (3.236> 2.024) and its significance value is less than 0.05 (p = 0.003 <0.05). So it can be said that there began to have a significant influence on posttest 2 (week 2) the amount of spending.

In posttest 3 the mean scores for group A (intervention group) increased to 1.65 and 1.15 for group B (control group). The result of tcount> ttable (3,658> 2,024) and its significance value is less than 0.05 (p = 0.001 <0.05). So it can be said that there is a significant influence on posttest 3 (week 3) the amount of expenditure.

In posttest 4 the average score for group A (intervention group) increased again to 1.85 times greater than group B (control group) whose mean value remained 1.15. The tcount> ttable (6.042> 2.024) and the significance value is less than 0.05 (p = 0,000 <0.05). So it can be said that there is a significant influence on posttest 4 (week 4) the amount of expenditure.

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**DISCUSSION**

**A. Univariate**

Based on the results of a study conducted on women of reproductive age who experienced fluorinated albus at Bidan Practice Mandiri Ny "S" from April to May of 2017, the results obtained pretest white intersection therapy (Curcuma zedoaria) showed that all women of reproductive age are 40 (100, 0%) women experienced pathologic fluorophilia in which group A (intervention as case group) was 20 (50.0%) and group B (not intervention as control group) of 20 (50.0%). Posttest frequency results showed that 20 women of reproductive age as group A (intervention group) who received white curcuma zedoaria therapy, as many as 18 (90.0%) had healing and only 2 (10,0%) women who were not or remain experiencing pathological albus fluoride. While the result of posttest frequency of 20 women of reproductive age as group B (not intervention as control group) obtained result of 20 (100,0%) respondent did not recover or still experience fluor albus. B. Bivariate Bivariate analysis was performed to test the hypothesis. To obtain maximum results, the comparisons performed on 40 respondents (20 intervention groups and 20 control groups) were conducted at the end of each week (posttest 1, 2, 3, and 4). In posttest 4 (week 4) as a determinant of the success or failure of therapy in women of reproductive age who experience pathological fluid albus. With the intention that one individual is different from the other so for healing with herbs takes different times for every woman of reproductive age who experience pathological albous fluorosis (Deherba, 2016)

The results of research that has been done by researchers turned out within 1 month 18 respondents have experienced recovery from pathological fluus albus. Research from Sa'roni and Yun Astuti Nugroho (2012) suggests the long use of turmeric for whitish drugs in patients with vaginal discharge until healed. Thus the researchers concluded that therapy with herbal plants in this case white temu (Curcuma zedoaria) can cure the whitish patient but require different healing time for each individual (Deherba, 2016).

In this study to determine the healing of fluorides albus, researchers assessed from several indicators of color, consistency of fluid, odor, itching, and the amount of expenditure (frequency change underwear). This is consistent with Prawirohardjo's (2007) theory that classifies physiologic albus fluorine and pathological fluorine albus by seeing signs of whiteness experienced by a person such as color, consistency of fluid, odor, itching, amount of expenditure.

The results of therapy that has been done on posttest 1 (week 1), began to increase on the average value of each indicator. The average color values were from 1.15 (pretest) to 1.40 on posttest 1, 1.80 on posttest 2, 1.85 on post test 3, and 1.90 on posttest 4. The average fluid consistency value of 1.15 (pretest) to 1.40 on posttest 1, 1.65 on posttest 2, 1.75 on posttest 3, and 1.90 on posttest 4. The average odor value from 1.15 (pretest) to 1 , 35 on posttest 1, 1.70 on posttest 2, 1.75 on posttest 3, and 1.90 on posttest 4. The mean value of itching from 1.15 (pretest) to 1.20 on posttest 1, 1, 70 at posttest 2, 1.70 on posttest 3, and 1.80 on posttest 4. The average value of expenditure amounts from 1.15 (pretest) to 1.35 on posttest 1, 1.60 on posttest 2, 1, 65 on posttest 3, and 1.85 on posttest 4.

An increase in the average score indicates that there are differences from group A (intervention as case group) and group B (not intervention as control group). That, there are already women of reproductive age from group A (the intervention group) who are slowly healing.

The result of hypothesis test on color indicator posttest 1 was obtained t count <ttabel (1,798 <2,024) and its significance value is greater than 0,05 (p = 0,081> 0,05), although it means that there is no significant influence but posttest 2 there is a t count> ttable (5,284> 2,024) and the significance value is less than 0.05 (p = 0,000 <0.05), posttest 3 tcount> ttable (6.042> 2.024) and the significance value is less than 0.05 (p = 0.000 <0,05), posttest 4 is obtained tcount> ttable (7.010> 2.024) and its significance value is less than 0,05 (p = 0,000 <0,05). So in this study it can be said that in posttest 1 is not no influence but no influence at week 1.

Similarly, the fluid consistency indicator, which in posttest 1 of the hypothesis test results is obtained t count <ttable (1,798 <2,024) and the significance value is greater than 0.05 (p = 0.081> 0.05) although

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it means that no effect significant but still there posttest 2 obtained t count> ttable (3,658> 2,024) and significance value less than 0,05 (p = 0,001 <0,05), posttest 3 got tcount> ttable (4,660> 2,024) and its significance value is smaller from 0,05 (p = 0,000 <0,05), posttest 4 is obtained tcount> ttable (7.010> 2.024) and its significance value is less than 0,05 (p = 0,000 <0,05). So in this research can be said that in posttest1 is not no influence but no influence at week 1.

In the odor indicator, the posttest 1 hypothesis test result is obtained t count <ttable (1,463 <2,024) and the significance value is greater than 0.05 (p = 0,152> 0,05), although it means that there is no significant influence but there is still posttest 2 is obtained tcount> ttable (4,127> 2,024) and its significance value is less than 0,05 (p = 0,000 <0,05), posttest 3 tcount> ttable (4,660> 2,024) and its significance value less than 0,05 (p = 0,000 <0.05), posttest 4 tcount> ttable (7.010> 2.024) and the significance value is less than 0.05 (p = 0,000 <0.05). So in this study it can be said that in posttest 1 is not no influence but no influence at week 1.

Indicator of itch, posttest 1 result of hypothesis test obtained t count <ttabel (0,406 <2,024) and significance value greater than 0,05 (p = 0,687> 0,05), although it means that there is no significant influence but still there posttest 2 there is a t count> ttable (4,127> 2,024) and its significance value is less than 0.05 (p = 0,000 <0.05), Posttest 3 tcount> ttable (4.127> 2.024) and its significance value is less than 0.05 (p = 0,000 <0.05). Posttest 2 and 3 show the same value which means the result is fixed, but in posttest 4 it increases where, tcount> ttable (5,284> 2,024) and its significance value is less than 0.05 (p = 0,000 <0.05). So in this study it can be said that in posttest 1 is not no influence but no influence at week 1.

The indicator of posttest expenditure number 1 of the hypothesis test result is tcount <1,140 (1,463 <2,024) and the significance value is greater than 0.05 (p = 0.152> 0.05), although it means that there is no significant influence but still there posttest 2 there is a t count> ttable (3,236> 2,024) and its significance value is less than 0.05 (p = 0.003 <0.05), Posttest 3 tcount> ttable (3.658> 2.024) and its significance value is less than 0.05 (p = 0.001 <0.05), posttest 4 tcount> ttable (6.042> 2.024) and the significance value is less than 0.05 (p = 0,000 <0.05). So in this study it can be said that in posttest 1 is not no influence but no influence at week 1.

When viewed from the results of the study, the average on posttest 1 (week 1) does not change or there is a change of white intake therapy (Curcuma zedoaria), entering posttest 2 (2nd week), posttest 3 (week 3) there have been some women of reproductive age who began to experience healing despite being different from every indicator under study. And at posttest 4 precisely at week 4, the average respondent experience healing (90%) .Hence it can be concluded H1 accepted. This means that there is influence of white intersection therapy (Curcuma zedoaria) against albus fluorine in women of reproductive age. It is proved by indepedent t test test, tcount> ttable and sig value (2-tailed) less than 0.05 (p = 0,000 <0,05). The results of this study are in line with the research conducted by Ridhowati (2015) which shows that there is a positive influence of turmeric boiling water on the occurrence of whiteness in adolescent girls in Dusun Cebongan Kidul, Tlogoadi, Mlati, Sleman, Yogyakarta. Evidenced by Wilcoxon Asymp sig (p) statistical test results of 0.000 (p value <0.05).

The plant part used is rhizomes. The rhizome contains curcuminoid (diarylheptanoid 3-4%), asiri oil, polysaccharide, and other classes. In line with Astutiningsih's research, et al (2014) asiri oil can inhibit the growth of Candida albicans. This is evidenced by a scheffe test showing significant values <0.05. Mechanism of action of anti oil fungi asiri is phenol group in asiri oil forming complex with protein in cell membrane so that clumping occurs. Clotting proteins are denatured causing decreased cell membrane permeability, transport of nutrients in the cell is disrupted so that the growth of fungi is disturbed (Siswandono and Soekardjo, 2000).

This is also reinforced by research Zahid Fikri and Nur Ismi (2015) which proves the combination of decoction of betel leaves and turmeric can overcome leucorrhoea. It is proved by the value of p = 0.02 <0.05. Asiri oil content contained in turmeric as bacteria destruction and contains anti inflammatory properties. The curcuminoid compound in white temu plant (Curcuma zedoaria) provides color and functional properties. This compound is one type of antioxidant and efficacious as

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hipokolesteromik, kolagum, koreletif bacteriostatic, spasmolitik, anti-inflammatory, and anti hepatotoxic. Curcuminoids include curcumin with the composition of the content is R1 = R2 = OCH3 10%, demektosikurkumin R1 = OCH3, R2 = R1-5%, bisdemetoksirkumin R1 = R2 == H, and 1.7-bis (4-hydroxyphenyl) -1.4 , 6-heptatrien-3-on (Suranto, 2001). This is also in line with the opinion of the Son (2011) who said the substance curcumin which is an anti-inflammatory agent or anti-inflammatory substance serves to treat various diseases one of them overcome leucorrhoea.

Thus the content of oil asiri and curcumin contained in turmeric can heal wounds and inhibit the activity of pathogenic fungi. In line with the opinion of Gratitude (2003) white intersection (Curcuma zedoaria) has efficacy as an anti-inflammatory / inflammation that treat various diseases one of them leucorrhoea.

**COVER**

The more regular the intake of white intestine (Curcuma zedoaria), the more fluorinated albus experienced by women of reproductive age, this is evidenced by the value of t count> ttable and the result is significantly smaller than 0.05 (0.000 <0.05).

Therefore, the Independent Practice Midwife Ny "S" provides health education about the benefits of White Gather (Curcuma zedoria) and can be applied in the treatment of fluoride albus and for women of reproductive age know information about reproductive health by improving personal hygiene and also the importance of utilizing herbs, especially Gathering White (Curcuma zedoaria)

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**EFFECTIVITY OF TEMULAWAK INSTANT TO MILK PRODUCTION IN POSTPARTUM MOTHER**

*Emy Suryani, Siswiyanti*

*Poltekkes Kemenkes Surakarta*

**Abstract**

Exclusive breastfeeding during the first six months of birth can prevent the deaths of approximately 1.3 million babies worldwide each year. Breast milk (breast milk) is the best natural nutrient for the baby because it contains the energy needs and substances needed during the first six months of life of the baby. Low breast milk production is one result of less frequent breast-feeding or breast milk, infant's suction is not effective, and lack of nutritional mother. To maintain the quality of mother's milk should follow the diet with the principle of balanced nutrition and consumption of various foods, especially dark green vegetables are good for smooth milk. Temulawak or Curcuma xanthorrhiza Roxb (Curcuma xanthorrhiza Roxb), is a medicinal plant originating from Indonesia that consist of immunomodular. Research on temulawak as immunomodulator until now has not been done.I mmunomodulator is a compound that can improve the body's defense mechanisms both specific and non specific. Such compounds largely work as mitogens that increase cell proliferation that play a role in immunity.The phenomenon back to nature has become a trend in society so that people's demand is increasing to natural materials for food consumption, health drinks and medicine. **Research methods:**The type of research Quasi Eksperimen with Static-Group-Comparison This research uses statistical test of chi square test. Sample use *Purposive Sampling*, the sample are 100 postpartum mothers who were normal delivery,gives breast feeding at least for six months, the weight of the baby >2500 gram, good sucking babies. **Result:** Breastfeeding is grouped into two ie smooth and not smooth. Based on the factors that influence milk production, it can be concluded that maternal breastfeeding production is 57% (57%) smoothly.Instant Ginger Effect on Breastfeeding on Intervention and Control groups the average for the intervention group is 0.76 with the p value = 0.000 (p <0.05). For the mean control group with mean 0,22 and p value = 0,000 (p <0,05).Effectivity of temulawak instant to milk production in postpartum mother.the group given instantly temulawak as much as 50 puerper mothers as much as 43 postpartum mother (43% 0 milk production smoothly and as much as 50 postpartum mother (50%) do not drink instant temulawak milk production not smoothly.As analysis using chi square test obtained the result value of X2 = 75,43 with the value p = 0,000 and OR = 0.140. Based on these results concluded that instant temulawak effective against the production of breast milk with the value of OR = 0.14.That means postpartum mother given instant temulawak tends to smooth milk production of 0.140 times compared to those not given instant ginger. The group given instantly temulawak as much as 50 puerper mothers as much as 43 postpartum mother (43% ) milk production smoothly and as much as 50 postpartum mother (50%) do not drink instant temulawak milk production not smoothly. **Conclusions:** Instant temulawak effective against milk production with value OR = 0.14. This means that postpartum mother given instant temulawak tends to smooth milk production of 0.140 times compared to that is not given instant temulawak.

**PRELIMINARY**

Puerperal period is also called post partum is the period or time since the baby is born and the placenta out of the womb, until the next six weeks, accompanied by recovering organs associated with the contents that undergo changes such as injury associated with childbirth (Suherni, 2008) .

The purposa of Postpartum is to meet the needs of mothers and infants covering prevention, early detection and treatment of complications, and possible illnesses and provision of breastfeeding services, pregnancy-inducing, immunization and nutrition for women. During childbirth a mother is inseparable from breast milk and breastfeeding (Prawirohardjo, 2009).

UNICEF (2007) data suggests exclusive breastfeeding during the first six months of birth can prevent the deaths of approximately 1.3 million babies worldwide each year. Breast milk (breast milk) is the best natural nutrient for the baby because it contains the energy needs and substances needed during the first six months of life of the baby. But there are times when a mother has problems in breastfeeding. The main obstacle is the production of breast milk is not smooth (Saleha, 2009).

Low breast milk production is one result of less frequent breast-feeding or breast milk, infant's suction is not effective, and lack of nutritional mother (Saleha, 2009). To maintain the quality of mother's milk should follow the diet with the principle of balanced nutrition and consumption of various foods, especially dark green vegetables are good for smooth milk (Yuliarti, 2010). To facilitate breastfeeding puerperal mother also used to consume traditional herbal medicine.

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Traditional herbs are ingredients or ingredients in the form of plant material, animal ingredients, mineral matter, sari (galenic) preparations, or a mixture of such ingredients which have been hereditary for treatment, and may be applied in accordance with the norms prevailing in the community (KEMENKES , 2010).

Currently there is a health paradigm that is more oriented to preventive, promotive efforts that are carried out in a balanced way with curative efforts in creating a healthy society. Therefore, herbal medicine is expected to be used more optimally in supporting the efforts of health services in preventive, promotive, curative, rehabilitative efforts. Utilization of herbal medicine in public health service will have wide impact because herbal medicine important role in other sectors that is, economy, environment, social culture and tourism (KEMENKES, 2010).

Curcuma xanthorrhiza Roxb (Curcuma xanthorrhiza Roxb), is a medicinal plant originating from Indonesia especially Java island, then spread to Indo-Malaya region. Currently temulawak cultivated in Indonesia, Malaysia, and the Philippines. Research on temulawak as immunomodulator until now has not been done.

Immunomodulation (Immunostimulant) is a compound that can improve the body's defense mechanisms both specific and non specific. Such compounds largely work as mitogens that increase cell proliferation that play a role in immunity (KEMENKES, 2010).

The phenomenon of back to nature or back to nature has become a trend in society so that people's demand is increasing to natural materials for food consumption, health drinks and medicine. One kind of findings that are widely used as a traditional medicine is temulawak, so researchers interested in doing research on medicinal plants as a facilitator of milk production.

**RESEARCH METHODS**

The type of research used was Quasi Eksperimen with Static-Group-Comparison approach that is giving an action to the subject group that received treatment, then compared with the subject group that did not get treatment (Nursalam, 2003). This research uses statistical test of chi square test that is difference test of two dependent mean. A test difference of two dependent means is used to test the differences between the two groups of dependent data. The chi square test is based on the nominal data scale.

**RESEARCH RESULT AND DISCUSSION**

A. Research Results

1. **Respondent's characteristic**

Characteristics of respondents include age, education, occupation and number of children

Table 4.1 Characteristics of Respondents

No Characteristic Frequency Percentage

1 age

< 20 tahun

20-35 tahun

> 35 tahun

2 Education SD

SMP

SMA

PT

3 Work

Does not work

Work

2

96 2

6

23 59 12

86 14

2

96 2

6

23 59 12

86 14

44

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4 Number of children 1

2

3

4

5

24 54 20 2

0

24 54 20 2

0

Total 100 100

Based on table 4.1 characteristics of respondents with the most ages are aged 20-35 years as many as 96 people (96%), education respondents most is high school as many as 59 people (59%), most respondents are not working as many as 86 people (86%) and the number of children at most is 2 as many as 54 people (54%).

2. **Breast milk production**

Breastfeeding is grouped into two ie smooth and not smooth.

Table 4.2 Breastmilk Production

No Breast feeding

1 Weight

Frequency Percentage

Normal

Less

2 Urinate

Normal

Less

3 Breastfeeding Normal

Less

4 Long Sleep Normal

Less

5 Breastmilk Production

Smoothly

46 54

57 43

72 38

80 20

46 54

57 43

72 38

80 20

Not smooth 57 43

57 43

Total 100 100

Based on table 4.2 breastfeeding can be seen from the baby's weight is mostly less as much as 54 people (54%). Urination of the baby is mostly normal as many as 57 people (57%), breastfeeding most are normal as many as 72 people (72%) and sleep duration most are normal as many as 80 people (80%). Based on the factors that influence milk production, it can be concluded that maternal breastfeeding production is 57% (57%) smoothly.

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3. **Instant Ginger Effect on Breastfeeding on Intervention and Control groups** Table 4.3 Breastfeeding Production in Postpartum Mothers in Control and Intervention Groups

Milk

Production

Mean N Std *p*

Intervention 0,76 50 0,354 0,000

Control 0,22 50 0,112 0,000

Based on the above data it can be seen that the average for the intervention group is 0.76 with the p value = 0.000 (p <0.05). For the mean control group with mean 0,22 and p value = 0,000 (p <0,05).

4. **Effectivity of temulawak instant noodle to milk production in postpartum mother.** Table 4.4 Effectivity of temulawak instant noodle to milk production in postpartum mother. Treatment Breast Milk Production Total χ2 p OR Smoothly Not Smooth f %

f % f %

Drunk

Not Drinking

43 0

43 0

7

50

7

50

50 50

50 50

75,43 0,000 0,140

Total 43 43 57 57 100 100

Based on Table 4.4 it is known that the group given instantly temulawak as much as 50 puerper mothers as much as 43 postpartum mother (43% 0 milk production smoothly and as much as 50 postpartum mother (50%) do not drink instant temulawak milk production not smoothly.As analysis using chi square test obtained the result value of X2 = 75,43 with the value p = 0,000 and OR = 0.140.

Based on these results concluded that instant temulawak effective against the production of breast milk with the value of OR = 0.14.That means postpartum mother given instant temulawak tends to smooth milk production of 0.140 times compared to those not given instant ginger. Based on Table 4.4 it is known that the group given instantly temulawak as much as 50 puerper mothers as much as 43 postpartum mother (43% ) milk production smoothly and as much as 50 postpartum mother (50%) do not drink instant temulawak milk production not smoothly.

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**DISCUSSION**

Based on Table 4.4 it is known that the group given instant temulawak as much as 50 postpartum as much as 43 postpartum mother (43%) milk production smoothly and as many as 50 postpartum mother (50%) do not drink instant temulawak milk production not smoothly. This is supported by the baby's weight gain is mostly normal, the baby's urination is also normal, breastfeeding with normal frequency and duration of normal baby sleep. Baby signs get enough milk is After suckling, baby looks full and calm, weight gain after the first 2 weeks. The weight gain is approximately 5-10 ounces each week in the first month, 2.5-4.5 ounces each week at 2 to 3 months. And from the age of 6-12 months, weight gain is usually 1-3 ounces each month.

Mother's breasts are empty and more tender, because the baby has emptied the breast milk that had made the breasts tight for full. When pinched baby's skin feels soft and supple, Baby drinking milk every 2-3 hours or in 24 hours at least get milk 8 times at 2-3 weeks first. The first few days, when the baby gets colostrum, urinate (BAK) baby 6-12 times. After a few days, the baby may defecate at least twice a day, the color is yellow or dark, and begin to change to a brighter color after the 15th day.

analysis using chi square test obtained the result value of X2 = 75,43 with value p = 0,000 and OR = 0,140. Based on these results it was concluded that instant temulawak effective against milk

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production with OR = 0.14. This means that postpartum mother given instant temulawak tends to smooth milk production by 0,140 times than those who do notχThe result of analysis using chi square test got result value given instant ginger. This result is in accordance with research Fitriani (2013), Effectivity of Temulawak in Lowering Blood Pressure on Elderly at UPT of Social Institution Tresna Werdha Mulia Dharma of Kubu Raya Regency that there is change of diastole value before and after giving temulawak.

Larto (2011), The influence of tamarind herbs on the increase of appetite in school-aged children who have below normal weight in SDN 04 Tosaren Kediri. that there is an effect of giving tamarind ginger to increase appetite in school age children who have below normal weight in SDN 04 Tosaren Kediri.

This condition is supported by temulawak contains kurkurmin. Curcumin, a polyphenol compound, has been used in the United States as a dye for cheese, mustard, cereal, pickles, potato chips, soups, ice cream and yoghurt. The highest fraction of essential oils obtained from rimpang planting the essential oil content decreased (Aspan, 2006).

The ginger rhizome has a pharmacological effect that is hepatoprotector, lowers cholesterol levels, antiinflammatory, laxative, diuretic, increases milk production, tonic, and relieves joint pain (Mahendra, 2005). The result of Hidayat's observation (2006), on histology picture showed that purified temulawak (Curcuma xanthorrhiza Roxb) extract which has been proven as anti-cholesterol has not been scientifically proven to directly affect the organ repair (liver, aorta and heart) Wistar male rats given high fat diet.

However there are 7 respondents (7%) with milk production is not smooth. This is because the factors that affect the production of breast milk, among others, maternal psychology, the state of the baby, nutrition.

**CONCLUSIONS**

Based on the research results obtained conclusion as follows instant temulawak effective against milk production with value OR = 0.14. This means that postpartum mother given instant temulawak tends to smooth milk production of 0.140 times compared to that is not given instant temulawak.

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**THE SYMPHONY ORCHESTRA OF MIDWIFERY EDUCATION IN INDONESIA: A DISCUSSION PAPER**

**Qorinah Estiningtyas Sakilah Adnani, Judith McAra-Couper, Andrea Gilkison**

**Abstract**

The midwife is in a unique and privileged position to assist women in staying healthy and making choices throughout the woman’s childbearing cycle. There is evidence that having more midwives, and better quality of midwives would enhance women, baby and family’s access to midwifery and maternity services associated maternal and newborn care outcomes health in developing countries. The Indonesia government has undertaken a number of initiatives and strategies in relation to midwifery by a proliferation of midwifery schools to produce qualified midwives to help address the high maternal and newborn mortality rate. Even though improvements have been made there remain some significant challenges. This article reviews midwifery education in Indonesia. There are many factors influencing the establishment and the present system of midwifery education in Indonesia.

*Keywords: midwifery, education, Indonesia*

**INTRODUCTION**

The literal meaning of midwife comes from the Anglo-Saxon “with a woman”, “wise woman”, “the sage femme” who immerse women’s rhythms”(Kitzinger, 1988). The word “midwife” also defined “mid” which meant “with” and “wif” which said “wife” or “woman” and most widely understood as “to be with a woman during childbirth” (Ament, 2007). The Indonesian word for midwife is “bidan” (Indonesian Midwives Association, 2007) which means women who have the skill to care for women in childbirth and caring for a baby.

The Indonesian Midwives Association became a member of the International Confederation of Midwives in 1956, so all the policies and development of midwifery in Indonesia refers to the guidelines set out by this professional association, includes the meaning of midwife. Indonesia adopted that a midwife is typically a woman who graduated a midwifery educational programme, has fulfilled the

certain qualifications to be qualified licensed as a midwife and is legalised in the country where the midwife is located (Indonesian Midwives Association, 2007; International Confederation of Midwives, 2012; Keputusan Menteri Kesehatan Republik Indonesia, 2007). Midwives in Indonesia are professionals who are responsible and accountable and have autonomy to demonstrate competency in counselling preconception care, antepartum care, birth management, postpartum care, newborn assessment, breastfeeding support, and family planning (Keputusan Menteri Kesehatan Republik Indonesia, 2010).

The philosophy behind the midwifery practice model in Indonesia is that midwives work in partnership with women and professionally offer comprehensive midwifery care. The partnership model means that the midwife and the woman are equal decision-makers regarding choices in health care, that midwives provide continuity of care, and midwifery care is evidence-based (Keputusan Menteri Kesehatan Republik Indonesia, 2007).

**AIM**

In order to address the midwifery education issues in Indonesia, this article orchestrates the dialogue regarding midwifery education in Indonesia.

**METHODOLOGY**

This paper is part of the PhD research utilised qualitative inquiry was conducted as approved by Auckland University of Technology Ethics Committee (AUTEC), Auckland, New Zealand and the Health Research Ethics Committee (HREC) Faculty of Medicine Padjadajaran University, Bandung, West Java, Indonesia. Moreover, approval letter from midwifery schools run by university, institute

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of health science, polytechnics of health science, private organisations, across Java and West Sumatera which work under the Ministry of Research, Technology and Higher Education and the Ministry of Health as well as Midwifery Association of Indonesia and Indonesian Midwifery Education Association, was granted prior to commencement.

**Recently Statistical Number of Maternal and Newborn Mortality Rates in Indonesia and Elsewhere**

The trend largest contribution to global maternal mortality mainly comes from developing countries, which is Indonesia is one (Hogan et al., 2010; World Health Organization, UNICEF, UNFPA, & The World Bank, 2012). According to the World Health Organization et al. (2012), the maternal and infant mortality rate is ranked the highest in the world occur in Asia countries and Sub

Saharan Africa, with one-third taking place in Southeast Asia.

Table 1 Maternal Mortality Rates (MMR) across worldwide (World Health Organization et al., 2012) 

With 359/100,000 births, the maternal mortality rate in Indonesia in 2012 was ranked the highest in South Eastern Asia compared with Malaysia 170/100,000 births; Myanmar 330/100,000 births; and Brunei Darussalam 40/100,000 births (BPS, BKKBN, Kemenkes, & ICF International., 2013; World Health Organization, 2012). The maternal mortality rate decreased from 390 in 1991 to 228 in 2007 and 220 in 2010 (BPS et al., 2013). This may not reveal the actual deaths that are more likely underreported than overreported (BPS et al., 2013).

In Indonesia, the leading cause of maternal mortality is due to postpartum haemorrhage, followed by hypertensive disorders. Midwifery care that is hard to access can lead to a delay in, women and family seeking, reaching and receiving midwifery care (Scott, Chowdhury, Pambudi, Qomariyah, & Ronsmans, 2013). Deploying midwives in villages in Indonesia has managed to increase the number of births attended by midwives from 20% in 1991 to approximately 85% in 2012. In Indonesia, 68.6% of maternity services at childbirth is provided by midwives, followed by doctors (18.5%) and non

health workers (11.8%) (Kementerian Kesehatan Republik Indonesia, 2014a). The Indonesia of Ministry of Health aimed to locate one skilled midwife in each village in various settings of Indonesia followed establishing the community midwives training programme. The government set a midwifery training program who completed junior high school nursing program for conducting midwifery service. This program was then replaced by the Midwifery Diploma programme for midwives for three-year

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(Hennessy, Hicks, & Koesno, 2006). The government emphasise more students to study in midwifery school and placing the newly graduated midwives in serving in the community for the minimum of two years (Shiffman, 2003). Despite the increased number of midwives, the maternal and perinatal mortality rate has not reduced significantly (Kementerian Kesehatan Republik Indonesia, 2014a; Shankar et al., 2008; Van Lerberghe et al., 2014).

**The history of midwifery education in Indonesia**

Indonesia has a long history regarding the establishment of midwifery schools and midwifery education. The evolution of midwifery education in Indonesia is divided into two stages. One stage was during Dutch, and Japan colonial government and the other after Indonesia gained Independence.

**Midwifery education during Dutch and Japan colonial government**

Prior to 1800s, the traditional birth attendant or *dukun bayi* was the person who was specialised and accompanied women in childbirth. Hesselink (2011) pointed out that the traditional birth attendant was also tasked with providing contraception, assisting with fertility and inducing abortion (Hesselink, 2011). In the early 19th century (1809), the Dutch governor had an idea regarding the importance of training Indonesian women as midwives. In 1817, European midwives were obliged to prepare Indonesian and European women as midwives. In June 1850, Dutch head of the medical service, Dr

Williem Bosch proposed to establish a midwifery school with hopes of reducing the high risks for women in childbirth and the high maternal mortality rate in Java, which was associated with the use of the traditional birth attendant. In October 1851, a midwifery school opened in Jakarta with twenty Indonesian female students. The program was intended to take one and half years but in practice took two and a half to three years because the students had to learn to read and write. In 2nd September 1875, the midwifery school for Indonesian women closed for reorganisation because of the lack of trust among the population. Many preferred to be helped by Western-trained midwives. The midwifery graduates worked in twenty-one regions where they knew the language and customs of Indonesia. In 1893, the midwifery school was re-opened and remained open until 1915. At this time the program consisted of one year of midwifery training under the Dutch leadership. The midwifery training from 1892 to 1915 had produced one hundred graduates and distributed in Java and outer islands to assist the delivery of birth (Hesselink, 2011).

**Midwifery education in Indonesia after Independence**

After Indonesia had gained Independence on 17th August 1945, the midwifery school admitted students from junior high school to a three-year program. The graduate midwife from this program was called a first-class midwife. Graduate midwives from junior high school and three-year nurse program were called second-class midwives. A community midwifery education program opened in 1950 which led to the training of midwives for seven to twelve weeks who were placed in villages because of the recognition of the need for more Indonesian midwives. This programme with the aim of introducing the development of maternal and child programme which closed in 1967. In 1954 was opened midwifery teacher education, nurse teacher education and public health nurse which merged into the school of nurse education teacher in 1970. During 1975 to 1984, midwifery school were closed. In the 1990s, some nurses were educated to be midwives. It is noted that this movement as part in response to the safe motherhood conference in Nairobi 1987. In 1996, the diploma of midwifery education from senior high school for three years finally started. The midwifery program became a direct entry programme and so was offered to a female student without a nursing background. The Indonesian Midwives Association fought for forty-five years since the 1950s. They thought that the minimum entry to become midwives was from senior high school rather than junior high school because of the need for international recognition, high demand from the stakeholder, and the strong emphasis government policy had on placing midwives in rural areas through the village midwife program. The primary focus of the

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community midwife program initially was expected to have sufficient partnership with women and family to increase the professional delivery care and imbalance in service provision and contribute to reducing the maternal and newborn mortality rate.

**Midwifery education in Indonesia today**

Since 2000, Indonesia has had several routes to midwifery education. Midwives can be registered if they have completed either a diploma, advanced diploma, or bachelor of midwifery. The Indonesia government took the initiatives some years ago to build a system of midwifery schools which produce fully qualified midwives to address the high maternal and newborn mortality rate.

Table 2 Number of midwifery schools in Indonesia

Category of midwifery school Number of schools Vocational programme:

- Diploma of Midwifery

- Advanced Diploma of Midwifery Academic programme:

- Bachelor of Midwifery

679 69

3

Table 3 Number of postgraduate midwifery programme in Indonesia

Category of midwifery school Number of

schools

- Master of Midwifery (two years midwifery programme with matriculation

4

programme after graduated from an advanced diploma of midwifery or two years midwifery programme after completing bachelor of midwifery programme)

- Doctor of Midwifery (three years midwifery programme after finished

0

master of midwifery programme)

Table 4 The direct entry of midwifery school in Indonesia

Category of midwifery school Description

Vocational programme:

- Diploma of Midwifery

- Advanced Diploma of Midwifery

Academic programme:

- Bachelor of Midwifery

three years midwifery programme after 12 years of primary education

four years midwifery programme after 12 years of primary education or one-year midwifery programme after graduated from the diploma of the midwifery programme

five years midwifery programme after 12 years of primary school or two and half years midwifery programme after completed the diploma degree of the midwifery programme

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Table 5 Number of accredited midwifery schools based on Regional by Midwifery Education Association of Indonesia 2011

| Regional | Number of Diploma of Midwifery  School | Accredited by the National  Accreditation  Body Colleges | Number of Advanced  Diploma of Midwifery  School | Accredited by the National Accreditation Body  Colleges |
| --- | --- | --- | --- | --- |
| Regional 1 | 206 | 46 | 15 | 3 |
| Regional 2 | 56 | 10 | 12 | 2 |
| Regional 3 | 85 | 48 | 5 | 0 |
| Regional 4 | 89 | 27 | 5 | 2 |
| Regional 5 | 120 | 24 | 8 | 1 |
| Regional 6 | 87 | 29 | 3 | 0 |
| Amount | 643 | 184 | 48 | 8 |

Source: (Health Professional Education Quality, 2012)

Table 6 Number of accredited Diploma and Advanced Diploma of Midwifery Programme by the Indonesian Accreditation Agency for Higher Education in Health

| Category accreditation | Diploma of Midwifery | Advanced Diploma of Midwifery |
| --- | --- | --- |
| A | 2 | 0 |
| B | 145 | 18 |
| C | 98 | 5 |
| Total | 245 | 23 |

Source: Lembaga Akreditasi Mandiri Pendidikan Tinggi Kesehatan (2015)

Table 7 Number of accredited midwifery schools by the National Accreditation Body Colleges

| Category  accreditation | Diploma of Midwifery | Advanced  Diploma of Midwifery | Bachelor of Midwifery | Master of Midwifery |
| --- | --- | --- | --- | --- |
| A | 0 | 0 | 0 | 0 |
| B | 4  6 | 3 | 1 | 2 |
| C | 248 | 6 | 0 | 0 |
| Expired | 130 | 2 | 0 | 0 |
| Total | 424 | 11 | 1 | 2 |

Source: Badan Akreditasi Nasional Perguruan Tinggi (2017)

**DISCUSSION**

Some challenges about midwifery education in Indonesia have been identified. Hennessy, Hicks, Hilan, and Kawonal (2006) and Rokx et al. (2010) pointed out that evaluation and development of midwifery education in Indonesia should be undertaken. It has been suggested that the focus of this assessment be within the framework of education and the competencies for midwifery practice (Anderson, Meliala, Marzoeki, & Pambudi, 2014; Farooqi, 2009; Rokx et al., 2010). Amidst the growth of midwifery schools certain elements have been identified such as education curriculum, competency criteria, and clinical standards that need to be strengthened in order to close the gap and provide

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sufficient quality as well as the quantity of midwives (Anderson et al., 2014; Hennessy, Hicks, & Koesno, 2006; Rokx et al., 2010). Therefore, strengthening midwifery education is the first critical step along with legislation and accreditation in accordance with an agenda of midwifery education globally (Bharj et al., 2016).

Efforts to deliver high-quality education have to deal with various challenges and a broad coalition of national authorities, professional associations, communities, development partners, health services, and educational institutions (World Health Organization, 2011). The midwifery association internationally is a significant catalyst to work together with midwifery education in the promotion of women’s health care (Chamberlain, McDonagh, Lalonde, & Arulkumaran, 2003)

Strengthening midwifery education involves more than midwives and needs other interested parties. The complexity of making a difference to maternal and neonatal mortality rate includes a broad collaboration of certain elements such as obstetricians, doctors (Siassakos et al., 2010), midwifery educators, midwifery students, newly graduated midwives, and other stakeholders such as women (Lassi, Haider, & Bhutta, 2010; Persson et al., 2014; Prost et al., 2013). The clinical mentor together with the midwifery educator in the midwifery school has a unique contribution. They prepare midwifery students and boost confidence to work competently and confidently in midwifery practice by delivering a dynamic range of topics, demonstrating skills in sessions in the laboratory as well as in practice (Skirton et al., 2012). The midwifery educator has a significant capacity to support the curriculum as an essential element and play a pivotal role in midwifery education because they are responsible for midwifery content in curriculum-based competency and clinical courses (Collington, Mallik, Doris, & Fraser, 2012; Way, 2016). In the context of Indonesia, the partnerships and collaboration to deliver high quality midwifery education involve midwifery educators, midwifery students, the midwifery association, clinical midwifery mentors in a clinical setting, women, and other stakeholders. Each element has a significant role in enhancing midwifery education. The whole process requires the collaboration between midwifery students, women, midwifery educators, and clinical mentors. One of the challenges to strengthening midwifery education is to ensure the cooperation in clinical areas is managed well (Health Professional Education Quality, 2014).

The Indonesian government and private organisations, such as the educational foundations, Muhammadiyah societies, Nahdlatul Ulama societies have made a significant investment in educating student midwives since 1996. As a result, the midwives who graduate each year doubled from 8,264 in 2006 to 17,828 in 2010. There are currently 753 midwifery schools of which 328 are situated in Java, and these are run by universities, institutes of health science, polytechnics of health science, and academies (Health Professional Education Quality Direktorat Jendral Pendidikan Tinggi, 2012). The Ministry of Health runs vocational education courses with a diploma and an advanced diploma, in midwifery. The Ministry of Research, Technology and Higher Education also offer vocational education and academic education with an advanced diploma, bachelor, and master’s in midwifery.

The private organisation provides a similar range of qualifications. The proliferation of midwifery schools and graduated midwives is designed to provide an excellent service for women and families in Indonesia (Anderson et al., 2014). Rokx et al. (2010) and Anderson et al. (2014) pointed out that the education standard,such as accreditation process, midwifery teaching, infrastructure, curriculum-based competency, and the lack of a regulatory body for midwives provides some challenges for quality midwifery education. In fact, the proliferation of midwifery schools in Indonesia makes it difficult to ensure accountability, assurance processes, graduate support, supervision, and the quality of the midwifery education (Health Professional Education Quality, 2014). Also, at present, the research pointed out that some midwifery students in Indonesia may graduate with less than optimal skills and knowledge (Health Professional Education Quality, 2014; Yanti, Claramita, Emilia, & Hakimi, 2015).

Western countries educational models such as the Netherlands, the United Kingdom, New Zealand have influence on the development of midwifery education in Indonesia (De Vries, 2001; Gilkison, Pairman, McAra-Couper, Kensington, & James, 2015; Health Professional Education

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Quality, 2012; Holland et al., 2010; Mivšek, Baškova, & Wilhelmova, 2016). For example, the direct entry program, competency based curriculum, having qualified midwifery educators, qualified clinical mentors, the components of the practice/ theory ratio (60%:40%), and achievement of a minimum standard for clinical competencies, such as conducting 50 births (Departemen Kesehatan Republik Indonesia, 2002).

After successful completion of a midwifery program, the graduate midwives are registered as midwives. Registered midwives achieve registration by passing a national examination and gaining a certificate to practice as a midwife (Keputusan Menteri Kesehatan Republik Indonesia, 2010). The Indonesia Ministry of Health determines the standards of midwifery competence required for an Indonesian midwife to work within the scope practice of midwifery. This includes the fulfilment of certain elements and minimum standards that are expected to be present in order to be a competent midwife in a midwifery practice (Keputusan Menteri Kesehatan Republik Indonesia, 2007). Furthermore, the Ministry of Health states that the graduate midwives’ profile in Indonesia has to show that a graduate is a qualified midwifery care provider, decision maker, communicator, community leader, and manager (Keputusan Menteri Kesehatan Republik Indonesia, 2007).

Table 5 The requirement to become a registered midwife in Indonesia

An obligation to become a registered midwife (new):

a. Midwifery degree

b. Competency certificate

c. A Certificate of physical and mental health

d. Statutory declaration

e. Will adhere to professional ethics

The requirement for recertification registered midwife:

a. The previous Certificate of registered midwife

b. Competency certificate

c. A certificate of physical and mental health

d. Statutory declaration

e. Have devoted them as a midwife

f. Fulfil their service activities, education, training and or scientific activities (Kementerian Kesehatan Republik Indonesia, 2014b)

Indonesia has no Midwifery Council that regulates midwifery education, but it has a robust Midwifery Association scattered in 34 provinces that has the vision to educate professional midwives in accord with global standards. On the 28th October 2008, the Indonesian Midwifery Education Association was formed in the spirit to enhance the integrity of midwifery education within Indonesia. Based on their data, 693 out of 753 midwifery schools joined the Indonesian Midwifery Education Association (Asosiasi Pendidikan Kebidanan Indonesia, 2015). For the rest, the reason for not joining is unknown or might be due to no obligation on enrolment. The Indonesian Midwives Education Association made an effort to establish a policy regarding quality assurance for midwifery education in Indonesia. Variations in the midwifery diploma curriculum led to the Association to formulate a curriculum for the diploma. They received input from stakeholders. The diploma curriculum includes learning outcomes, the graduate profile, study materials, the structure and an outline of teaching that can be used by a diploma midwifery school (Asosiasi Pendidikan Kebidanan Indonesia, 2015).

The Ministry of Research, Technology and Higher Education has the mandate to support the development of competent midwives through the professional project (Health Professional Education Quality, 2014; Health Professional Education Quality Direktorat Jendral Pendidikan Tinggi, 2012). This project is expected to contribute to the improvement of health services by strengthening the grade of health professionals in Indonesia such as midwives. This aim will be achieved through strengthening

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systems and institutions accreditation, ensuring competency, developing national competency standards, certification and licensing, and the development of school quality. Together with the midwifery association and other health professions, the Health Professional Education Quality Project made an effort to create an independent body to accredit health institutions. In March 2015, professional organisations, including medicine, midwifery, dentistry, nursing, and pharmacy in Indonesia formed the Indonesian Accreditation Agency for Higher Education in Health, which regulates the high demands of accreditation, especially for health institutions (Perkumpulan LAM-PTKes, 2015). This agency ensures health organisations including midwifery schools in Indonesia meet standards for accreditation to ensure competent graduates work in midwifery services (LAM-PTKes, 2015).

In 1994, the National Accreditation Body Colleges was formed by the Ministry of Education and Culture. This agency aims to accredit colleges and universities (Badan Akreditasi Nasional Perguruan Tinggi, 2014). So, in Indonesia, there are two bodies, which seek to monitor the accreditation of higher education programmes. This system creates ambivalence accreditation for midwifery schools in Indonesia. The number of accredited midwifery schools below reveals the dualism of accreditation system for midwifery education. However, based on the letter announcement from the Indonesian Accreditation Agency for Higher Education in Health that some questions arise what health programme can be accredited by and from programmes related to the types of health programmes. The letter announces that the accreditation has been transferred from the National Accreditation Body Colleges to the Indonesian Accreditation Agency for Higher Education in Health refer to the name of the program based on Cluster of Science and Technology and Graduate Degree College on the future (LAM-PTKes, 2016).

Recently, the Indonesian Midwives Association together with the Indonesian Midwifery Education Association proposed a model of autonomy in midwifery education and the framework of midwifery education to the government of Indonesia (Ikatan Bidan Indonesia, 2016a). In addition, the Indonesian Midwives Association lobbied for Midwifery Act to the Indonesian parliament (Ikatan Bidan Indonesia, 2016a). Midwifery Act is expected to regulate midwifery profession in Indonesia comprehensively. Also, one of the member the Indonesian parliament states that the Indonesian government should more realise further tighten the opening of the midwifery schools (Ikatan Bidan Indonesia, 2016b).

Therefore, the questions further raised, how it can be done differently? What lesson learnt from the movement of the government, the accreditation agency, the midwifery association, the midwifery schools, the stakeholders such as the hospital, maternity clinic, private midwifery practice, and others? What is your inspiration and thought about midwifery education in Indonesia?

**CONCLUSIONS**

It is believed that there are significant challenges in strengthening midwifery education in the future. Collaboration and coalition between diverse stakeholders, national authorities, and professional association should be strengthened to help lift the standard, framework, system, and quality of midwifery education. Also, Midwifery Council will be on the agenda to be formed, as well as Midwifery Act. This paper is part of the first writer’s doctoral degree which investigating midwifery education in Indonesia. This research provides insight into midwifery education in Indonesia. The significance of this study is that midwives further supported to make a difference to the health outcome of mothers and babies (Utz & Halim, 2015). Being Indonesian registered midwife and midwifery educator, the first writer culturally aware essential factors which have contributed to improving midwifery education in Indonesia. Findings from this study have the potential to reinforce the significance of midwifery education in other developing countries in South East Asia where the majority of maternal and newborn mortality occurs (World Health Organization et al., 2012). Moreover, the findings of this research are in line with Indonesia’s commitment to reach the target of Sustainable Development Goals in 2030 by enhancing midwifery education. It is essential to stress that maternal-neonatal health outcomes achievable by

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excellent midwifery care of competent and confident midwives who trained from adequate midwifery schools.

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**POST PARTUM UMBILICAL CORD CARE PRACTICES: BASIS FOR UMBILICAL CORD HOME CARE GUIDELINES**

JESSIE T. ORANO, RN, RM, MN

ABSTRACT

This study is based on mother’s knowledge, attitudes and practices on the care of the newborn’s umbilical cord conducted at the Municipal Health Office (MHO) of Surallah and Barangay Libertad Health Station in Surallah, South Cotabato. The study determined the level of compliance, knowledge, skills and practices of mothers regarding the care of the baby’s umbilical cord. It employed purposive sampling in the selection of key informants of the study who are mothers. Wearing clean gloves in cleaning umbilical cord is one of the practices to be improved. It is recommended to implement ways and the bridging of the identified gaps to improve neonatal infection and strengthen the information education counselling on umbilical cord care. Psychosocial support is also recommended for the prevention of post-partum problem to the mothers especially to the babies and provide IEC (Information, Education and Communication) materials published in the local dialect to the post-partum mothers as a guide on how they will clean the umbilical cord.

Keywords: Umbilical Cord Care, Guidelines, Post-Partum

**BACKGROUND**

In developed countries, although rare, individual cases of cord infections continue to occur in hospitals and birthing centers. For this reason, umbilical cord care is an important issue that needs to be addressed. Keeping the umbilical cord stump clean and dry is important if infection is to be prevented (Healthwise, 2017). Staphylococcal aureus epidemics arose and the umbilical was found to be a reservoir for the bacteria (Simon, 2004).

Aseptic cord and skin care practices were introduced many years ago to reduce the risk of infections. Common practice of applying drying agents or antibiotics to an infant’s umbilical cord stump may be based on tradition rather than on scientific research and investigation. Currently and throughout history, many different substances have been used on the umbilical cord stump to help hasten the drying process and lessen the chance of infection. Some of the methods, that have been used on umbilical cord stumps include plant extracts, coins, olive oil, coconut oil, colostrum, triple dye, providone-iodine (Betadine) various antibiotics, alcohol (70% isopropyl) but the initial care to clean the cord and surrounding skin is only sterile water and no treatment at all (Mama Natural, 2017).

In the study of (Mullaney et al., 2016) entitled: “Topical Applications of Chlorhexidine to the Umbilical Cord for Prevention of Omphalitis and Neonatal Mortality in Southern Nepal: A Community based, Cluster Randomized Trial” reveals that there are 1.44 million (36%) deaths, and about half of deaths in regions with umbilical cord infection. Each year, one-third of neonatal deaths worldwide (1.5 million) are due to infection and many of them begin as umbilical cord infection. Simple preventive aseptic practices are not universally implemented. In the Philippines as of 2007, 39.6% of neonatal death occurred before the first day of life, and one of the 4th-8th leading causes is bacterial sepsis of newborn (Aurora, Reolalas and Novilla, 2010).

The Department of Health (DOH) Region 12 states that in the Province of South Cotabato, the neonatal tetanus is caused by practices such cutting of umbilical cord with unsterile instrument of applying contaminated dressing and is deadly for the majority of infected babies. DOH also reported that there are 23 confirmed cases of neonatal tetanus in Region 12 from January 1 – September 30, 2016 (Cabrido, 2014).

With the current state of the problem presented, there is a pressing need to conduct a research because of neonatal death around 39.6% in the Philippines as of 2007 with 23 confirmed cases of neonatal tetanus in Region 12 as of 2016 due to the incorrect practices of umbilical cord care. Probably, the compliance level result could be a disturbing case for the healthcare providers to assess and evaluate such practices. This leads the researcher to see the compliance level of post-partum mothers towards the follow up of umbilical cord care specifically in Surallah, South Cotabato. Through this study, this could

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be an eye opener towards awareness of good practices and compliance level of umbilical cord care to prevent such phenomenon. Hence, the researcher would like to determine the relationship between the profile of post-partum mothers and their level of compliance level towards follow up umbilical cord care of their newborns.

Cord care using evidence based research is the best way for midwives, because of this research midwife can teach mothers to take care of their infant’s umbilical cord in safest possible way (Kathy, 2008).

**OBJECTIVES**

This study determined the postpartum umbilical cord care practices of the respondents as a basis for umbilical cord home care guidelines:

1. What is the profile of respondents in terms of:

a) age;

b) educational attainment;

c) tribal affiliation;

d) religion and;

e) distance of home from the nearest barangay health center?

2. What is the level of compliance of the respondents to the standard umbilical cord care? 3. Is there a relationship between the profile of post-partum mothers and their level of compliance towards follow-up umbilical cord care?

**METHODOLOGY**

The researcher used descriptive-correlational research design. This research design used helped to describe the profile of post-partum mothers from Surallah, South Cotabato and also to examine its relationship with their level of compliance towards follow-up umbilical cord care. Post-partum mothers’ profile includes their age, educational attainment, tribal affiliation and distance of home from the nearest barangay health center. Their level of compliance will be described as highly-complaint, very compliant, compliant, fairly compliant, and non-compliant. It was conducted in Surallah, South Cotabato, Mindanao, Philippines. The respondents were the 60 purposively sampled post-partum mothers who were referred by the Surallah Municipal Health Office. A self-made questionnaire which was validated and pilot tested was used as the main tool of the study. Results obtained will be analyzed using Pearson Product Moment Correlation Coefficient (PPMCC) to obtain a reliability index of 0.99 which was considered appropriate for the study.

**RESULTS AND ANALYSIS**

Table 1. Profile of the Respondent as to Age

Age Frequency Percentage 16-20 4 7 20-28 26 43 28-35 25 42 35-45 5 8 Total 60 100

Table 1 presents the age of the respondents. The result shows that 7% belongs to the age bracket of 16-20 years old, for the age bracket of 35-45 years old is 8% and there were only 5 respondents involved, 42% were in the age bracket of 28-35 years old. It shows that the age bracket of 20-28 years old has the highest rating that accounted for 26 respondents and the percentage rate is 43%. This was the majority rate of the participants belong in the age.

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A study by Triza, et al., (2011), found that age, educational level, socio economic status influenced maternal knowledge and practice of umbilical cord care. Age is one factor in putting a pregnant mothers and their fetus at risk for complication, according to Smith (1993) pregnancy occurs in young women under 19 years of age or in women over 35, the expectant mother and her fetus are at risk in age related to complication.

Table 2. Profile of the Respondent as to Educational Attainment

Educational Attainment Frequency Percentage Pre-School - 0 Elementary Level 2 3 Elementary Graduate - 0 High School Level 6 10 High School Graduate 13 22 Vocational Level 3 5 Vocational Graduate 2 3 College Level 12 20 College Graduate 22 37 Total 60 100

Table 2 indicates the educational attainment percentage of the respondents. The result shows that many of the post-partum respondents are college graduates (37%), 22% high school graduates, 20% college level, and 10% the high school level. Wherein elementary level got the lowest rate with only 3%.

According to Opara et al., (2011) one hundred and fifty eight (71.5%) of mothers had at least secondary education. Fifty four (24.4%) mothers were in the high social class, while 65 (29.4%) and 102 (46.2%) were of middle and low social classes respectively.

Table 3. Profile of the Respondent as to Tribal Affiliation

Tribal Affiliation Frequency Percentage Ilonggo 44 73

Ilocano 1 2 Tboli 2 3 Blaan 2 3 Muslim 1 2

Others 10 17 Total 60 100

Table 3 indicates the tribal affiliation of the respondents. The result shows that the highest percentage is 73% with the frequency of 44 which refers to the Ilonggo tribe. It is followed by 17% with the frequency of 10 referring to other identified tribes. The Tboli and Blaan tribes got 3% and the lowest percentage of 1% was recorded for Ilocano and Muslim tribes. The data show that majority of the respondents are Ilonggo.

Few studies from India according to Das, Kapoor, and Nikitin, (2010) have also highlighted the traditional practices like cutting umbilical cord by bamboo piece or through crushing by stone, and newborn feeding practices like herbal paste and goat’s milk, and have suggested for change through appropriate communication. Unless the cultural beliefs underpinning the traditional practices are known, it might be difficult to achieve any change in care behavior. This is more applicable for a country like India with diverse sociocultural structure because each ethnic group has its own practice system for care-

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