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Research Article

Analysis of Risk Factors for Low Birth Weight (LBW) in the Work Area of the Setu II Bekasi Health Center

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Abstract. The aim of the study was to analyze the risk factors for LBW events in the working area of the Setu II Bekasi Health Center in 2022. This research was an analytic survey study using a cross-sectional study design with a population of 521 people and a sample of 84 people who were selected using a random sampling technique. Data was taken using a questionnaire which was then processed using a statistical program. Results: The study found that 22.6% of babies were born with a weight < 2500 grams, 27.4% of mothers aged < 20 and > 35 years, 20.2% of mothers with gestational age < 37 weeks, 28.6% of mothers with parity ≥ 3 children, 14.3% of mothers had LILA <23.5 cm, 7.1% of mothers had HB levels <10 g/dl, 10.7% of mothers experienced pregnancy complications. The results of statistical analysis using the chi square test found that the risk factors associated with the incidence of LBW were gestational age (p value = 0.000), parity (p value = 0.019) and pregnancy complications (p value = 0.025). While the risk factors that were not related to the incidence of LBW were mother's age (p value = 0.179), upper arm circumference (p value = 0.455) and HB levels (p value = 0.126). Conclusion: the risk factors associated with the incidence of LBW are gestational age, parity and complications of pregnancy. Therefore, it is hoped that parents will always take care of their pregnancies by checking their pregnancies to health services, so as to minimize risk factors during pregnancy.

Keywords: *Risk Factors, Low Birth Weight.*

A. INTRODUCTION

One indicator of a country's success in improving public health is by reducing the infant mortality rate (IMR) (De Onis et al., 2019). IMR is the number of babies who die before reaching the age of 1 year expressed in 1,000 live births in the same year. One of the causes of the high infant mortality rate (IMR) is low birth weight (LBW) (Kemenkes RI, 2020).

Explains that 60-80% of the Infant Mortality Rate (IMR) that occurs is caused by LBW. LBW babies have a greater risk of experiencing morbidity and mortality than babies born with normal weight. A gestation period of less than 37 weeks can cause complications in the baby due to the imperfect growth of the organs in the body. The possibility of what will happen will be worse if the baby's weight is getting lower (WHO, 2018).

Data from the World Health Organization (World Health Organization), states that the prevalence of babies with LBW in the world is 15.5% or around 20 million babies are born each year, around 96.5% of them occur in developing countries (WHO, 2018).

Based on Indonesia's 2020 Health Profile data, IMR in 2019 reached 29,322 deaths. The highest cause of IMR is the condition of low birth weight (LBW) with a total of 7,150 deaths or 35.3%. According to the results of the Indonesian Health Demographic Survey or IDHS in 2017 it shows that the number of IMR is 24 per 1,000 live births. It is hoped that the IMR will continue to decrease through interventions that can support child survival aimed at reducing the IMR to 16 per 1000 live births in 2024 (RI Ministry of Health, 2020).

Related to the incidence of LBW in Indonesia, based on the 2017 national socio-economic survey (Susenas) found LBW incidence of 13.87% (KPPPA, 2018) and decreased to 6.2% in 2018 (Ministry of Health RI, 2019). Data from the Directorate of Community Nutrition in 2019 showed that there were around 3.4% of babies with LBW reported by 25 out of 34 provinces in Indonesia (RI Ministry of Health, 2020). Meanwhile, according to Basic Health Research (Riskesdas) data, the prevalence of LBW cases in West Java province was found to be 6.32% of cases.

According to research conducted by Trisnawati et al (2021) the risk factors associated with the incidence of LBW are maternal age and gestational age. Meanwhile, the results of the study by Permana & Wijaya (2019) found that mothers with multiple pregnancies and gestational age are risk factors that can cause LBW.

Setu II Health Center is one of the community health centers in Setu District, Bekasi Regency, where one of the services provided is maternal and child health, such as helping mothers during the pregnancy process to the delivery process. Based on the results of a preliminary survey by looking at medical record data from January to June 2022, the Setu II Bekasi Health Center found data on newborns of 521 babies. Of these, 12 (2.3%) LBW babies were found. Medical record data also shows that LBW babies occur in mothers aged 19 years, also occur in mothers with 36 weeks' gestation, and occur in mothers who already have 4 children. From the description above, the researchers felt it was important to carry out an analysis of the risk factors for LBW events in the working area of the Setu II Health Center in Bekasi.

B. METHOD

This research is a quantitative analytic survey study using a cross-sectional research design to look at the risk factors associated with LBW events in the working area of the Setu II Bekasi Health Center in 2022. Cross-sectional research is a study to study the dynamics of the correlation between risk factors and effects, by means of approach, observation or data collection at one time (Notoatmodjo, 2016).

This research was conducted in the working area of the Setu II Health Center in Bekasi in December 2022. The independent variables in this study were maternal age, gestational age, parity, LILA, HB levels and pregnancy complications and the dependent variable was the incidence of LBW . In this study the researchers used the Guttman scale.

Notoatmodjo (2016) states that the study population is a generalization area consisting of subjects or objects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn. The population in this study were newborns in the working area of the Setu II Health Center in Bekasi, namely as many as 521 people and the research sample used the Slovin formula as many as 84 people. To get a statistical picture of the relationship between the independent variables and the dependent variable, use the Chi Square test. through the help of a computer program Windows SPSS. where if the P Value ≤ Alpha value (0.05) then it means that Ho is rejected and Ha is accepted, meaning that there is a relationship between maternal age, gestational age, parity, LILA, HB levels and pregnancy complications with the incidence of LBW in the working area of the Setu II Health Center Bekasi in 2022 and if the P Value > Alpha value (0.05) it means that Ho is accepted and Ha is rejected, meaning that there is no relationship between maternal age, gestational age, parity, LILA, HB levels and pregnancy complications with the incidence of LBW in the working area of the Setu II Health Center Bekasi in 2022. In addition to the chi square test to see the relationship between variables, the researchers also used the Odds Ratio (OR) test to see the magnitude of the risk between variables. The estimated OR confidence interval is set at a 95% confidence level.

C. RESULT AND DISCUSSION

1. Distribution of the Frequency of LBW Events in the Work Area of the Setu II Health Center in Bekasi in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 newborns, only a small proportion (22.6%) were born with LBW babies. The results of this study are in line with the theory put forward by Proverawati & Ismawati (2019) which states that low birth weight babies (LBW) are babies with a birth weight of less than 2500 grams regardless of gestational age. LBW is a term to replace premature babies because there are two forms of causes for the birth of babies weighing less than 2,500 grams, namely because the gestational age is less than 37 weeks, the weight is lower than it should be even at full term or because of a combination of both.

The results of this study are in line with research conducted by Pebrina & Helda (2020) using data from the 5th Indonesian Family Life Survey (IFLS) in 13 provinces in Indonesia which found only 10.5% of babies born with LBW. The results of Aryaneta & Dewi's research (2021) in the working area of the Sei Langkai health center, Batam City, also found that only 6.6% of babies were born with LBW.

According to the researchers' assumptions, this is inseparable from several factors that can influence the incidence of LBW such as maternal age, gestational age, parity, spacing of pregnancies, LILA, HB levels, socioeconomic, pregnancy complications, twin pregnancies, congenital abnormalities, and many other factors.

2. Characteristics of Respondents Based on Mother's Age in the Work Area of the Setu II Bekasi Health Center in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (27.4%) were aged < 20 and > 35. The results of this study are in line with the theory put forward by Manuaba (2014) which states that that age under 20 years and over 35 years is an age that is considered at risk during pregnancy. Pregnancy at the age of less than 20 years, the pelvis and uterus are still small and the reproductive organs are immature, whereas at the age of over 35 years, the maturity of the reproductive organs has decreased compared to the age of 20-35 years. The results of the study found a small proportion of respondents aged < 20 and > 35 or pregnancies at risk so that at that age a mother is at risk of giving birth to a baby with LBW.

3. Characteristics of Respondents Based on the Age of Pregnancy in the Work Area of the Setu II Bekasi Health Center in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (20.2%) were found with gestational age < 37 weeks. The results of this study are in line with the theory put forward by Kosim et al (2014) which states that gestational age is the estimated age of the fetus which is calculated from the first day of normal menstruation until delivery. The distribution of gestational age was divided into groups, namely preterm gestational age less than 37 weeks or less than 259 days, term gestational age between 37 and 42 weeks or 259-293 days, postterm gestational age more than 42 weeks or more than 294 days. The results of the study found a small number of respondents with gestational age < 37 weeks. Manuaba (2014) states that babies born with a gestational age of less than 37 weeks are at risk of experiencing LBW.

4. Characteristics of Respondents Based on Parity in the Work Area of the Setu II Bekasi Health Center in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (28.6%) had parity of ≥ 3 children. The results of this study are in line with the theory put forward by Manuaba (2014) which states that parity is a term used to express the number of deliveries a mother has experienced. Parity is an important factor that can affect the well-being of the fetus during pregnancy. The results of the study found a small proportion of respondents with parity ≥ 3 children. Manuaba (2014) also revealed that the risk parity is ≥ 3.

5. Characteristics of Respondents Based on LILA in the Work Area of the Setu II Bekasi Health Center in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (14.3%) had an upper arm circumference (LILA) <23.5 cm. The results of this study are in line with the theory put forward by Hardinsyah and Supariasa (2017) which states that Upper Arm Circumference (LILA) is a type of anthropometric examination used to measure the risk of chronic energy deficiency (CED) in women of childbearing age which includes adolescents, pregnant women, breastfeeding mothers and couples of childbearing age (PUS). Whereas the LILA threshold for WUS with the risk of KEK is 23.5 cm and if it is less than 23.5 cm the woman will experience KEK. The results of the study found that a small proportion of respondents had an upper arm circumference (LILA) < 23.5 cm. Amelia et al (2022) stated that poor nutritional status, both before pregnancy and during pregnancy will disrupt the growth of the fetus so that it has a risk of giving birth to a baby with LBW.

6. Characteristics of Respondents Based on HB Levels in the Work Area of the Setu II Health Center in Bekasi in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (7.1%) had HB levels <10 g/dl. The results of this study are in line with the theory put forward by Cunningham (2016) which states that hemoglobin is a parameter commonly used to determine the prevalence of anemia. Deficiency of hemoglobin (HB) is a health problem that is often experienced by pregnant women. The theory put forward by Saifuddin (2013) also states that low hemoglobin (HB) levels in pregnant women is one of the health problems that can occur during pregnancy. Anemia during pregnancy is indicated if the hemoglobin concentration is less than 10 g/dl.

The results of the study found that a small proportion of respondents had HB levels <10 g/dl. The theory put forward by Aboye et al (2018) states that anemia that occurs during pregnancy can cause fetal hypoxia. This has an impact on reducing the flow of oxygen and nutrients from mother to fetus , which can interfere with the growth and development of the fetus in the womb and cause babies to be born with a birth weight of less than 2500 grams.

7. Characteristics of Respondents Based on Pregnancy Complications in the Work Area of the Setu II Bekasi Health Center in 2022

Based on the results of research conducted in the Work Area of the Setu II Health Center in Bekasi, it can be seen that out of 84 respondents, a small proportion of respondents (10.7%) had pregnancy complications. The results of this study are in line with the theory put forward by Prawiroharjo (2016) which states that complications during pregnancy are health problems that often occur during pregnancy and also during childbirth. The consequences of

complications during pregnancy can cause health problems for the mother, the baby at birth, or the health of both.

The results of the study found that a small proportion of respondents had pregnancy complications. Amelia et al (2022) suggested that low birth weight babies can occur in mothers who have problems/complications during pregnancy such as hyperemesis gravidarum, hypotension, preeclampsia and eclampsia. Diseases directly related to pregnancy such as antepartum bleeding, physical and psychological trauma, diabetes mellitus and infectious diseases are one of the causes of LBW because the fetus grows slowly or shortens the mother's gestational age.

8. Relationship between Maternal Age and LBW Incidence in the Work Area of the Setu II Bekasi Health Center in 2022

The results of research conducted in the working area of the Setu II Bekasi Health Center found 23 respondents aged < 20 and > 35 years. Of these, it was found that 8 (34.8%) respondents gave birth to babies with a weight <2500 grams or had low birth weight. Chi square analysis found p value = 0.179, so it was concluded that there was no relationship between maternal age and the incidence of LBW in the working area of the Setu II Health Center in Bekasi.

The results of the study are in line with research conducted by Amelia et al (2022) in the working area of the Kaluku Badoa Public Health Center, Makassar City, which found no relationship between maternal age and the incidence of LBW (p value = 0.362). Aryana et al's research (2021) at Sanglah General Hospital Denpasar Bali also found no relationship between maternal age and the incidence of LBW (p value = 0.317).

This research is not in line with the theory put forward by Manuaba (2014) which states that the maturity level of the reproductive organs is not optimal at the age of > 20 years, as well as a decrease in the maturity of the reproductive organs at the age of > 35 years can result in health problems during childbirth and the risk of defects occurring. congenital abnormalities that can cause babies to experience LBW. Research is also not in line with the theory put forward by Hurlock (2014) which states that mothers who give birth at a young age of less than 20 years have immature reproductive organs and do not function optimally for pregnancy so that it can harm the health of the mother and the growth of the fetus, due to food competition. between the fetus and the mother who are still growing, as well as hormonal changes during pregnancy so that these women have a greater need for nutrients than other women. Over the age of 35, a woman experiences a decline in biological functions in the body's organs, one of which is a decrease in intestinal mobility which will cause a decrease in appetite. This will also affect the intake of nutrients needed between the mother and the fetus, which can cause babies to be born with LBW. The results of the study are also not in line with the results of research by Trisnawati et al (2021) at dr. Ben Mboi Ruteng NTT who found a relationship between maternal age and the incidence of LBW (p value = 0.004).

There is a difference between the theory and the results of the study which found no relationship between maternal age and the incidence of LBW in the working area of the Setu II Bekasi Health Center, according to the researchers' assumptions this was because one of them was the fulfillment of the mother's nutritional intake and the consumption of other supplements during pregnancy so that the nutritional needs of the mother and the fetus in the womb is maintained, so that even though the mother's age is <20 years and > 35 years the baby can still be born with normal weight.

9. The relationship between gestational age and the incidence of LBW in the Work Area of the Setu II Health Center in Bekasi in 2022

The results of research conducted in the working area of the Setu II Health Center in Bekasi found 17 respondents with gestational age <37 weeks. Of these, it was found that 11 (64.7%) respondents gave birth to babies with a weight <2500 grams or had low birth weight. Chi square analysis found a p value = 0.000, so it was concluded that there was a relationship between gestational age and the incidence of LBW in the working area of the Setu II Health Center in Bekasi. The results of the analysis also found an OR = 13.521 meaning that mothers with gestational age <37 weeks had a 13 times greater risk of giving birth to babies with a weight <2500 grams compared to mothers with gestational age ≥ 37 weeks.

The results of the research are in line with research conducted by Trisnawati et al (2021) at dr. Ben Mboi Ruteng, NTT, who found a relationship between gestational age and the incidence of LBW babies (p value = 0.023) with OR = 2.583, which means that mothers with a gestational age < 37 weeks have a 2.5 times greater risk of giving birth to LBW babies than mothers with a gestational age ≥ 37 Sunday. Research by Lestari et al (2020) through a systematic review study of 11 articles also found that there was a relationship between gestational age and the incidence of LBW. The results of the study are also in line with the theory put forward by Manuaba (2014) which states that babies born at less than 37 weeks of gestation are at risk of experiencing LBW due to several factors, one of which is growth that is not aligned and harmonious due to retroplacental circulation disorders and malnutrition/ chronic nutrition.

There is a significant relationship between gestational age and the incidence of LBW in the working area of the Setu II Bekasi health center, according to the researchers' assumption this is due to the biological weight of the fetus in the womb increasing according to gestational age, so that fetal growth at < 37 weeks is not perfect and the baby experiences LBW at birth.

10. Parity Relationship with LBW Incidence in the Work Area of the Setu II Health Center in Bekasi in 2022

The results of research conducted in the working area of the Setu II Bekasi Health Center found 24 respondents with parity ≥ 3 children. Of these, it was found that 10 (41.7%) respondents gave birth to babies with a weight <2500 grams or had low birth weight. Chi square analysis found p value = 0.019, so it was concluded that there was a relationship between parity and the incidence of LBW in the working area of the Setu II Health Center in Bekasi. The results of the analysis also found OR = 4.048, meaning that mothers with parity ≥ 3 children have a 4 times greater risk of giving birth to babies with a weight < 2500 grams compared to mothers with parity < 3 children. The results of the study are not in line with research conducted by Trisnawati et al (2021) at dr. Ben Mboi Ruteng NTT who found no relationship between parity and the incidence of LBW (p value = 0.706). Research by Permana & Wijaya (2019) at the Gianyar public health UPT which also found no relationship between parity and the incidence of LBW (p value = 0.150).

The results of the study are in line with the theory put forward by Manuaba (2014) which states that parity at risk is ≥ 3. The theory put forward by Asiyah (2017) also states that grandemultiparous pregnancies (high parity) cause a decrease in tissue flexibility (elasticity) that has repeated itself times stretched by previous pregnancies, so that there may be a tendency for abnormalities in the location or growth of the placenta to the growth of the fetus so that it will give birth to babies with low birth weight.

The theory put forward by Prawirohardjo (2016) also states that babies born with low birth weight are caused by a history of high parity, because the reproductive system in high parity mothers has been depleted due to frequent births. This is caused by the higher the parity

of the mother, so that the endometrial quality will decrease. Repeated pregnancies will affect the circulation of nutrients to the fetus where the amount of nutrients will be reduced compared to previous pregnancies. High parity will have an impact on the emergence of various health problems for both mothers and babies born. One of the health impacts that may arise from high parity is related to the incidence of LBW.

There is a significant relationship between parity and the incidence of LBW in the working area of the Setu II Bekasi health center, according to the researchers' assumption this is because in mothers with high parity the reproductive system experiences depletion due to frequent births which then affects the circulation of nutrients to the fetus where the amount of nutrients will be reduced compared to previous pregnancies which then resulted in low birth weight babies.

11. The relationship between LILA and LBW events in the Work Area of the Setu II Health Center in Bekasi in 2022

The results of research conducted in the working area of the Setu II Health Center in Bekasi found that 12 respondents had an upper arm circumference (LILA) <23.5 cm. Of these, 10 (41.7%) mothers gave birth to babies with a weight <2500 grams or had low birth weight. Chi square analysis found a p value = 0.455, so it was concluded that there was no relationship between LBW mothers in the working area of the Setu II Health Center in Bekasi. The results of the study are also not in line with research conducted by Aryaneta & Dewi (2021) in the working area of the Sei Langkai health center in Batam City which found a relationship between upper arm circumference (LILA) and the incidence of LBW (p value = 0.000). Research by Amelia et al (2022) in the working area of the Kaluku Badoa Health Center, Makassar City, also found a relationship between LILA and the incidence of LBW (p value = 0.003). This is due to the low intake of energy and nutrients before and during pregnancy. During pregnancy there is an increase in the energy metabolism of nutrients. If the nutritional status is poor, both before pregnancy and during pregnancy it will disrupt the growth of the fetus so that there is a risk of giving birth to a baby with LBW.

Upper Arm Circumference (LILA) is a type of anthropometric examination used to measure the risk of chronic energy deficiency (KEK) in women of childbearing age which includes adolescents, pregnant women, breastfeeding mothers and couples of childbearing age (PUS).

The results of the study are not in line with the theory put forward by Yuliana & Istianah (2021) which states that upper arm circumference (LILA) describes the state of food consumption, especially energy and protein consumption in the long term or accumulation from childhood/adolescence. This chronic energy deficiency causes pregnant women not to have adequate reserves of nutrients to provide for the physiological needs of pregnancy, resulting in stunted growth and development of the fetus and babies born with low or below normal weight.

There is a difference between theory and the results of research which found no relationship between maternal LILA and the incidence of LBW in the working area of the Setu II Bekasi health center, according to the researchers' assumptions this is due to other factors such as during pregnancy the mother always pays attention to the nutritional needs of the fetus in her womb, such as by how to eat nutritious food and additional nutrition from certain pregnant milk products, so that the baby's growth can be maximized according to gestational age and born with normal weight.

12. The Relationship between HB Levels and LBW Occurrences in the Work Area of the Setu II Health Center in Bekasi in 2022

The results of research conducted in the working area of the Setu II Bekasi health center found that 6 respondents had HB levels <10 g/dl. Of these, it was found that 3 (50.0%) mothers gave birth to babies with a weight < 2500 grams. Chi square analysis found a p value = 0.126, so it was concluded that there was no relationship between HB levels and the incidence of LBW in the working area of the Setu II Health Center in Bekasi. The research results are not in line with research conducted by Lestari et al (2020) through a systematic review study found that hemoglobin levels are one of the factors associated with the incidence of LBW.

The results of the study are not in line with the theory put forward by Cunningham (2016) which states that a deficiency of hemoglobin (HB) is a problem of anemia. Anemia in pregnant women increases the risk of giving birth to babies with low birth weight (LBW), bleeding, and if a pregnant woman has severe anemia it can result in death for the mother and her baby. Anemia during pregnancy reduces the body's metabolic disorders, thus interfering with fetal growth, low birth weight, birth defects in babies, and increasing the risk of infection in the baby.

The theory put forward by Aboye et al (2018) also states that anemia that occurs during pregnancy can cause fetal hypoxia. This has an impact on reducing the flow of oxygen and nutrients from the mother to the fetus, which can interfere with the growth and development of the fetus in the womb and cause babies to be born with a birth weight of less than 2500 grams. Decreased HB levels in pregnant women increase the risk of LBW, bleeding before and during childbirth and if a pregnant woman suffers from very severe HB deficiency, maternal and child death can occur (Proverawati & Ismawati, 2019).

There is a difference between the theory and the results of the study which found no relationship between HB levels and the incidence of LBW in the working area of the Setu II Bekasi Health Center, according to the researchers' assumptions this was due to the presence of other factors which were confounding factors that influenced the incidence of LBW.

13. Relationship between Pregnancy Complications and LBW Incidence in the Work Area of the Setu II Bekasi Health Center in 2022

The results of research conducted in the working area of the Setu II Health Center in Bekasi found that as many as 9 respondents experienced pregnancy complications. Of these, it was found that 5 (55.6%) respondents gave birth to babies with a weight < 2500 grams or had low birth weight. Chi square analysis found a p value = 0.025, so it was concluded that there was a relationship between pregnancy complications and the incidence of LBW in the working area of the Setu II Health Center in Bekasi. The results of the analysis also found an OR = 5.446 meaning that mothers who had pregnancy complications had a 5 times greater risk of giving birth to babies with a weight < 2500 grams compared to mothers who did not have pregnancy complications.

The results of this study are in line with research conducted by Pebrina & Helda (2020) using data from the 5th Indonesian Family Life Survey (IFLS) in 13 provinces in Indonesia which found a relationship between pregnancy complications and the incidence of LBW (p value = 0.047). Research conducted by Amelia et al (2022) in the working area of the Kaluku Badoa Public Health Center, Makassar City also found that there was a significant relationship between pregnancy complications and the incidence of LBW (p value = 0.000).

The results of the study are in line with the theory put forward by Prawiroharjo (2016) which states that complications during pregnancy are health problems that often occur during pregnancy and also during childbirth. The consequences of complications during pregnancy can cause health problems for the mother, the baby at birth, or the health of both. Amelia et al

(2022) suggested that low birth weight babies can occur in mothers who have problems/complications during pregnancy such as hyperemesis gravidarum, hypotension, preeclampsia and eclampsia. Diseases that are directly related to pregnancy, such as antepartum bleeding, physical and psychological trauma, diabetes mellitus and infectious diseases are one of the causes of LBW because the fetus grows slowly or shortens the mother's gestational age.

The results of the study are also in line with the theory put forward by Manuaba (2014) which states that one of the direct complications of pregnancy is premature rupture of membranes (PROM). KPD can interfere with the health of the mother and also the growth of the fetus in the womb thereby increasing the risk of LBW births. Meanwhile, Cunningham (2016) stated that preeclampsia is a cause of low birth weight due to placental insufficiency caused by maladaptation of spiral arteries that provide nutrition to the placenta, so that placental blood flow is reduced. Proverawati & Ismawati (2019) also stated that preeclampsia is one of the causes of LBW. In preeclampsia, maternal endothelial dysfunction occurs resulting in placental ischemia which causes impaired and reduced placental circulation. This results in the fetus not being able to get adequate nutrition and oxygen for the growth of the fetus in the womb.

There is a significant relationship between pregnancy complications and the incidence of LBW in the working area of the Setu II Bekasi Health Center, according to the researchers' assumption, this is because these complications can affect the growth of the fetus in the womb. Pregnancy complications found were preeclampsia which disrupted the supply of nutrients and oxygen through the placenta for fetal growth. Hyperemesis gravidarum which causes a lack of food intake to meet the nutritional needs of the mother and fetus, as well as the presence of PMS which causes babies to be born prematurely.

D. CONCLUSION

Based on the analysis of risk factors for LBW events in the working area of the Setu II Bekasi Health Center, it can be concluded that 19 (22.6%) LBW babies were born with a weight < 2500 grams, the age of the mother was found in 23 (27.4%) mothers aged < 20 and > 35 years, gestational age was found in 17 (20.2%) mothers with gestational age < 37 weeks, parity was found in 24 (28.6%) mothers with parity ≥ 3 children, Upper arm circumference (LILA) was found 12 (14.3%) mothers had LILA < 23.5 cm, HB levels were found in 6 (7.1%) mothers had HB levels < 10 g/dl, pregnancy complications were found in 9 (10.7%) mothers experienced complications of pregnancy and the results of the research analysis found no relationship between maternal age and the incidence of LBW (p value = 0.179), there was a relationship between gestational age and the incidence of LBW (p value = 0.000), there was a relationship between parity and the incidence of LBW (p value = 0.019), there is a relationship between LILA and the incidence of LBW (p value = 0.455), there is relationship between HB levels and the incidence of LBW (p value = 0.126) and there is a relationship between pregnancy complications and the incidence of LBW (p value = 0.025).

With this research, it is hoped that the research results can become a source of information, a source of literature for the development of knowledge, especially midwifery education in reducing the incidence of LBW and it is hoped that the puskesmas will always remind pregnant women to always take care of their pregnancies until the time of delivery, which is ≥ 37 weeks. Reminding mothers to take part in the family planning program, namely 2 children is enough to suppress high parity, as well as reminding mothers to always have their pregnancies checked to prevent more severe pregnancy complications.

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