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Research Article

Risk Factors for the Incidence of Low Birth Weight Babies in Hospital TK IV 07.01 Lhoukseumawe

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Abstract: Based on the data obtained, 157 babies were born with LBW in 2016. In 2017 there were 142 babies born with LBW. In 2018 there were 134 babies born with LBW. Based on the results of an initial survey conducted by researchers at the TK IV 07.01 Lhokseumawe Hospital, the prevalence of LBW every month is still high from the last 3 years. The purpose of this study was to analyse the risk factors for the incidence of low birth weight babies at the Hospital TK IV 07.01 Lhokseumawe in 2024. The design of this study was quantitative research with a retrospective approach. The population of this study was 138 people, the sample was obtained by saturated sampling technique as many as 138 people. Univariate analysis, bivariate using chi-square and multivariate using multiple logistic regression at 95% confidence level. The results showed that the variables that had a risk with the incidence of LBW in Hospital TK IV 07.01 Lhokseumawe in 2024 were multiple pregnancies (p=0.026 <0.05) and a history of premature birth (p=0.017 <0.05). Variables that did not have a risk with the incidence of LBW were maternal age (p=0.847 >0.05), preeclampsia/eclampsia (p=1.000 >0.05), pregnancy distance (p=0.0322 <0.05) and premature rupture of membranes (p=0.439 >0.05). The study concluded that the incidence of LBW was influenced by 2 factors, namely multiple pregnancies and a history of preterm birth. The most dominant factor influencing it is the history of premature pregnancy.

Keywords: Early rupture of membranes, eclampsia, history of preterm birth, LBW incidence, mother's age, multiple pregnancy, preeclampsia, pregnancy spacing

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1. Introduction

National development organised by the Indonesian Nation is essentially the development of the whole human being and the development of all Indonesian people, which includes outward and inward and is the responsibility of the government and also the community. If examined more deeply, full human development can be realised if there is an increase in the quality of Indonesian human beings who are prepared from an early age, namely from the time the baby is conceived, the period of birth, the newborn period and the following period Click or tap here to enter text.. Birth weight is an indicator of a child's growth and development into adulthood and describes the nutritional status of the foetus during the womb. In developing countries, low birth weight (LBW) is still one of the problems of

nutrient deficiency. LBW is a baby who is born weighing less than 2,500 grams, regardless of gestation period Click or tap here to enter text..

Every couple wants their baby to be born normally, with a birth weight between 2500-4000 grams, full-term, born crying, and no severe congenital abnormalities. However, there are times when these wishes do not materialise, for example, a baby is born at term or a Low Birth Weight Baby (LBW). This fact should not discourage parents. With the advancement of medical technology and supported by the strong will of parents who have low birth weight, the baby will still survive Click or tap here to enter text.. Low birth weight babies (LBW) are babies born weighing less than or equal to 2500 grams. LBW can be categorised into pure prematurity and dysmaturity. Pure prematurity is a baby with a gestation period of less than 37 weeks and a body weight by the weight for gestational age. Dysmaturity is a baby with a body weight less than the weight that should be for gestational age; this indicates that the baby has intrauterine growth retardation Click or tap here to enter text..

Many factors are associated with LBW births, while perfectly separating the factors associated with prematurity from small for gestational age (SME) babies is very difficult. Preterm infants whose birth weight is within gestational age are usually associated with medical conditions where there is an inability of the uterus to retain the foetus, interruption in the course of pregnancy, premature placental detachment, or uncertain stimuli that cause effective uterine contractions before the pregnancy reaches full term. KMK babies are associated with medical conditions that interfere with, for example, placental circulation and efficiency, fetal development or growth, or the general health and nutrition of the mother Click or tap here to enter text.. The causes of LBW are multifactorial, such as poor maternal nutrition during pregnancy, impaired growth in the womb (slow-growing foetus), placental factors, infection, abnormalities of the mother's uterus, trauma, and so on. During labour, LBW are at high risk for asphyxia due to immature lungs. Another risk is hypothermia (body temperature 6.5ºC - 16.7ºC). Therefore, the attention and service, and care of LBW starts from birth Click or tap here to enter text..

Broadly speaking, LBW is influenced by two factors, namely maternal factors and foetal factors. Maternal factors that influence the incidence of LBW are the age of the mother during pregnancy (<20 years or >35 years and the distance between childbirth and pregnancy is too short), the mother's condition (previous history of LBW, working too hard, social economy, nutritional status, smokers, drug users, alcohol), and mothers with health problems (severe anaemia, pre-eclampsia, infection during pregnancy) while from the baby's factor (congenital defects and infection during the womb) Click or tap here to enter text.. Some other factors that can affect birth weight include maternal age, parity, maternal height, birth spacing, and maternal occupation. Pregnancies that occur at an age below 20 years or above 35 years tend not to fulfil adequate nutritional needs for foetal growth, which will have an impact on the baby's birth weight. Maternal age less than 20 years at the time of pregnancy has a risk of LBW 1.5-2 times greater than pregnant women aged 20-35 years. More than three deliveries risk complications such as bleeding and infection, so there is a tendency for babies to be born with LBW conditions Click or tap here to enter text..

The results of Surasmi's research reveal that newborns whose body weight is 2500 grams or less are called premature babies. it turns out that the morbidity and mortality of neonates depend not only on their body weight but also on the maturity of the baby. Until now, low birth weight babies (LBW) still have a problem in the world because they are the cause of morbidity and mortality in the newborn period. Based on data from the Ministry of Health of the Republic of Indonesia in 2018, the highest incidence of LBW in the world is in developing countries such as Vietnam (5.3%), Thailand (6.6%). Low birth weight (LBW) is the leading cause of perinatal death. Most babies with LBW are born in developing countries, 96.5%, especially in areas with vulnerable populations Click or tap here to enter text..

Based on data from the Ministry of Health of the Republic of Indonesia in 2018, the number of babies born in Indonesia was 4,720,024 babies, with 2,410,487 male babies and 2,309,537 female babies. in North Sumatra, 299,284 with 152,573 male babies and 146,711 female babies Click or tap here to enter text.. Based on the results of the 2016 Indonesian Demographic and Health Survey (IDHS), the Neonatal Mortality Rate (NMR) in 2016 was 19 per 1,000 live births. This figure is the same as the IMR based on the 2007 IDHS and only decreased by 1 point compared to the 2002-2003 IDHS, which was 20 per 1,000 live births. The 2015 Inter-Census Population Survey (SUPAS) results showed an IMR of 22.23 per 1,000 live births, which means that it has reached the 2015 MDG target of 23 per 1,000 live births. Similarly, the under-five mortality rate (IMR) from SUPAS 2015 was 26.29 per 1,000 live

births, which also met the 2015 MDG target of 32 per 1,000 live births Click or tap here to enter text..

Of the 157 LBW babies in 2020, there were 53 babies with a diagnosis of premature rupture of membranes (PRD). Of the 142 LBW babies in 2012, there were 33 babies with a diagnosis of COPD. Out of 134 LBW babies in 2018, there were 25 babies with a diagnosis of CDD. Out of 157 LBW babies in 2016, there were 4 babies diagnosed with Pre-eclampsia. Out of 142 LBW babies in 2017, there were 13 babies diagnosed with Pre-eclampsia. Out of 134 LBW babies in 2023, there were 8 babies diagnosed with Pre-eclampsia. Out of 134 LBW babies in 2018, there were 25 babies diagnosed with COPD. Out of 157 LBW babies in 2016, there were 24 babies with a diagnosis of multiple pregnancy (gamelli). Out of 142 LBW babies in 2017, there were 11 babies with a diagnosis of multiple pregnancy (gamelli). Of the 134 LBW babies in 2018, there were 7 babies with a diagnosis of multiple pregnancy (gamelli). From the data obtained, it can be seen that almost every month Delia Langkat General Hospital handles babies with LBW conditions, this is a problem because LBW is a condition that is very threatening to the baby's life and has a major influence on the growth and development of the baby. So based on the above background, the researcher is interested in researching with the title 'risk factors for the incidence of low birth weight babies in TK IV Hospital 07.01 Lhokseumawe'.

2. Preliminaries or Related Work or Literature Review

Low birth weight (LBW), defined by the World Health Organisation (WHO) as a baby born weighing less than 2,500 grams, is a significant global health problem and one of the leading causes of neonatal morbidity and mortality [8,9]. The prevalence of LBW varies worldwide, with the highest incidence found in developing countries. This condition not only impacts infant survival, but also has long-term implications for growth, neurodevelopment, and susceptibility to chronic diseases later in life. The aetiology of LBW is multifactorial, reflecting a complex interaction between maternal, placental and foetal factors. From the maternal side, extremes in maternal age (too young or too old), poor nutritional status, previous obstetric history, as well as the presence of comorbidities such as preeclampsia, diabetes, and pregnancy infections, are major contributors. In addition, unhealthy lifestyles such as smoking, alcohol consumption, and drug abuse during pregnancy also significantly increase the risk of LBW. On the placental aspect, conditions such as placental insufficiency or placental abruption may hinder the delivery of adequate nutrients and oxygen to the foetus. Meanwhile, fetal factors such as multiple pregnancies or congenital anomalies can also lead to stunted fetal growth or premature labour [1,10].

Various studies have identified various risk factors that contribute to this condition, which can be categorised into maternal, placental and fetal factors. Maternal factors include extreme maternal age (too young under 20 years or too old over 35 years), poor maternal nutritional status (malnutrition or anaemia), previous obstetric history such as preterm delivery or LBW in previous pregnancies, and too close a gap between pregnancies (<2 years). Maternal comorbidities such as preeclampsia/hypertension, diabetes mellitus, chronic kidney disease, and various infections (e.g. urinary tract infection, malaria, HIV, or TORCH) significantly increase the risk of LBW. In addition, the mother's unhealthy lifestyle during pregnancy such as smoking, alcohol consumption, and drug abuse are strong risk factors that can inhibit fetal growth and trigger preterm labour.

In addition to maternal factors, the condition of the placenta also plays a crucial role in determining the birth weight of the baby. Placental insufficiency, placenta previa, or placental abruption can interfere with the adequate supply of nutrients and oxygen to the foetus, resulting in stunted foetal growth or Intrauterine Growth Restriction (IUGR), which ultimately manifests as LBW [11,12]. From the fetal perspective, multiple pregnancies (twins or multiples) inherently increase the risk of LBW due to competition for nutrients and space in the uterus, as well as a tendency for early labour. Congenital anomalies or chromosomal abnormalities in the foetus, as well as intrauterine infections that directly affect the foetus, can also lead to low birth weight. A comprehensive understanding of these risk factors is essential for the development of effective prevention and intervention strategies to reduce the prevalence of LBW and improve infant health outcomes.

3. Proposed Method

This type of research is analytical research using the cross sectional approach method, namely each research subject is only observed once and measurements are made of the status of the character or subject variable at the time of the examination [13,14], so that it can be known about the risk factors for the incidence of low birth weight babies in TK IV Hospital 07.01 Lhokseumawe. The population in this study were all nurses in the Perinatology Room of TK IV Hospital 07.01 Lhokseumawe, totalling 138 people. The sample in this study was the 'total population' method, namely, the entire population was sampled, with a total of 138 people. Researchers used a tool in the form of a questionnaire (questionnaire), which is several written questions used to obtain information from respondents regarding personal reports or things that are known Click or tap here to enter text.. The questionnaire in this study contains a checklist. Initial primary data collection was obtained from interviewing some nurses in the Perinatal Room of Hospital TK IV 07.01 Lhokseumawe. The main primary data obtained through the distribution of questionnaires conducted on all nurses in the Perinatal Room of Hospital TK IV 07.01 Lhokseumawe. Secondary data was obtained by taking data from TK IV Hospital Data 07.01 Lhokseumawe, Lhokseumawe City Health Office, journals and books related to this study.

4. Results and Discussion

4.1. Characteristics of the Respondents

Table 1. Distribution of Respondents Based on Maternal Age at Class IV 07.01 Lhokseumawe General Hospital in 2024

Characteristics of the Respondents	Amount	Percentage (%)
Age		
< 20 years	21	15.2
20-35 years	96	69.6
> 35 years	21	15.2
Total	**138**	**100**
Education		
Middle	84	60,9
High	54	39,1
Total	**138**	**100**
Work		
Not Working	99	71,7
Working	39	28,3
Total	**138**	**100**

Table 1 shows that the majority of respondents were aged 20-35 years (96 people), while a small number of respondents were aged <20 years and >35 years (21 people), which is 15.2%. 84 respondents (60.9%) had secondary education, and a small number of respondents (54 people) had tertiary education. 99 respondents (71.7%) were unemployed, and a small number of respondents (39 people) were employed.

4.2. Bivariate Analysis

4.2.1. Relationship Between Mothers' Age and the Incidence of Low Birth Weight (LBW)

Table 2. Relationship Between Mothers' Age and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	Mothers Age				Amount		*p-value*	*OR*
	<20 years dan >35 years		20-35 years					
	f	%	f	%	f	%		
LBW incidence	32	23,2	70	50,7	102	73,9		
Not LBW incidence	10	7,2	26	18,8	36	26,1	**0.847**	**1,189**
Total	**42**	**30,4**	**102**	**73,9**	**138**	**100,0**		

Table 2 shows that of the 42 respondents whose mothers were <20 years old and >35 years old, the majority were LBW (32), and 10 (7.2%) were non-LBW. Of the 98 respondents whose mothers were 20-35 years old, the majority were LBW (70) and 26 (18.8%). The bivariate test using Chi-Square yielded a p-value of 0.847 > 0.05, indicating no significant effect between maternal age and the incidence of LBW at the Lhokseumawe Class IV 07.01 General Hospital in 2024. The OR value was 1.189 > 1, indicating that maternal age was a factor that could increase the incidence of LBW by 1.2 times.

4.2.2. Relationship Between Preeclampsia or Eclampsia and the Incidence of Low Birth Weight (LBW)

Table 3. Relationship Between Preeclampsia or Eclampsia and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	Preeclampsia/Eclampsia				Amount		*p-value*	OR
	There Is		None					
	f	%	f	%	f	%		
LBW incidence	38	27,5	64	46,4	102	73,9		
Not LBW incidence	14	10,1	22	15,9	36	26,1	**1.000**	**0,933**
Total	**52**	**37,7**	**86**	**62,3**	**138**	**100,0**		

Table 3 shows that of the 52 respondents with preeclampsia/eclampsia, the majority were LBW (38) (27.5%), and 14 (10.1%) were non-LBW. Of the 86 respondents without preeclampsia/eclampsia, the majority were LBW (64) (46.4%), and 22 (15.9%) were non-LBW. The bivariate test using Chi-Square obtained a p-value of 1.000 > 0.05, indicating no association between preeclampsia/eclampsia and the incidence of LBW at the Class IV 07.01 Lhokseumawe General Hospital in 2024. The OR value = 0.933 < 1, indicating that preeclampsia is not a factor that can increase the incidence of LBW by 0.9-fold.

4.2.3. Relationship Between Pregnancy Spacing and the Incidence of Low Birth Weight (LBW)

Table 4. Relationship Between Pregnancy Spacing and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	Pregnancy Spacing				Amount		*p-value*	OR
	Risky		Not Risky					
	f	%	f	%	f	%		
LBW incidence	34	24,6	68	49,3	102	73,9		
Not LBW incidence	16	11,6	20	14,5	36	26,1	**0,322**	**0,625**
Total	**50**	**36,2**	**88**	**63,8**	**138**	**100,0**		

Table 4 shows that of the 50 respondents who had a risky pregnancy spacing, the majority of LBW were 34 people (24.6%), and not LBW incidence was 16 people (11.6%). Of the 88 respondents who had a distance pregnancy not at risk, the majority of LBW were 68 people (49.3%) and not LBW were 20 people (14.5%). The results of the bivariate test using Chi-Square obtained a p-value of 0.322 <0.05, meaning that there is no significant relationship between the distance of pregnancy and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 0.625 > 1, which means that the distance of pregnancy is a factor that can increase the incidence of LBW by 0.6 times.

4.2.4. Relationship Between History of Preterm Birth and the Incidence of Low Birth Weight (LBW)

Table 5. Relationship Between History of Preterm Birth and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	History of Preterm Birth				Amount		*p-value*	OR
	There Is		None					
	f	%	f	%	f	%		
LBW incidence	82	59,4	20	14,5	102	73,9		
Not LBW incidence	21	15,2	15	10,9	36	26,1	**0.017**	**2,929**
Total	**103**	**74,6**	**35**	**25,4**	**138**	**100,0**		

Based on table 5 shows that out of 103 respondents whose history of preterm birth in the existing category, the majority of LBW were 82 people (59.4%) and not LBW were 21 people (15.2%). Of the 35 respondents whose history of preterm birth in the no category, the majority of LBW were 20 people (14.5%) and not LBW were 15 people (10.9%). The results of the bivariate test using Chi-Square obtained a p-value of 0.017 <0.05, meaning that there is a significant relationship between the history of preterm birth and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 2.929 > 1 which means that the history of preterm birth is a factor that can increase the incidence of LBW by 2.9 times.

4.2.5. Relationship Between Multiple Pregnancy and the Incidence of Low Birth Weight (LBW)

Table 6. Relationship Between Multiple Pregnancy and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	Multiple Pregnancy				Amount		*p-value*	OR
	There Is		None					
	f	%	f	%	f	%		
LBW incidence	16	11,6	86	62,3	102	73,9		
Not LBW incidence	0	0	36	26,1	36	26,1	**0.026**	**2,419**
Total	**16**	**11,6**	**122**	**88,4**	**138**	**100,0**		

Table 6 shows that of the 16 respondents with multiple pregnancies, the majority were LBW as many as 16 people (11.6%) and there were no LBW in this study. Of the 122 respondents without multiple pregnancies, the majority of LBW were 86 people (62.3%) and not LBW were 36 people (26.1%). The results of the bivariate test using Chi-Square obtained a p-value of 0.026 <0.05, meaning that there is a significant relationship between multiple pregnancies and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 2.419 > 1 which means that multiple pregnancy is a factor that can increase the incidence of LBW by 2.4 times.

4.2.6. Relationship Between Early Rupture of Membranes and the Incidence of Low Birth Weight (LBW)

Table 7. Relationship Between Early Rupture of Membranes and the Incidence of Low Birth Weight (LBW)

Incidence of Low Birth Weight (LBW)	Premature Rupture of Membranes				Amount		*p-value*	OR
	There Is		None					
	f	%	f	%	f	%		
LBW incidence	66	47,8	36	26,1	102	73,9		
Not LBW incidence	20	14,5	16	11,6	36	26,1	**0.439**	**1,467**
Total	**86**	**62,3**	**52**	**37,7**	**138**	**100,0**		

Table 7 shows that of the 86 respondents with premature rupture of membranes, the majority were LBW with 66 people (47.8%) and not LBW with 20 people (14.5%). Of the 52 respondents without premature rupture of membranes, the number of LBW and not LBW was balanced with 36 people each (26.1%). The results of the bivariate test using Chi-Square obtained a p-value of 0.439 <0.05, meaning that there was no significant relationship between premature rupture of membranes and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 1.467 > 1 which means that premature rupture of membranes is a factor that can increase the incidence of LBW by 1.4 times.

4.3. Discussion

4.3.1. Relationship Between Mothers' Age and the Incidence of Low Birth Weight (LBW)

Based on the results showed that of the 42 respondents who had maternal age in the at-risk category, the majority of LBW were 32 people (23.2%). Of the 98 respondents who had maternal age in the non-risk category, the majority of LBW were 70 people (69.6%). The results of the bivariate test using Chi-Square obtained a p-value of 0.847> 0.05, meaning that there was no significant influence between maternal age and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 1.189 > 1 which means that the age of the mother is a factor that can increase the incidence of LBW by 1.2 times.

Maternal factors associated with birth weight in Garuda Health Centre in 2010. This research design used a cross sectional design, with 408 samples of mothers who gave birth at Garuda Health Centre in 2010. The data collected were secondary data obtained from the register book of pregnant women and maternity. Data were analysed using univariate, bivariate and multivariate analyses. The results showed the average age of the mother (27-28), maternal parity (1-2), ANC frequency (2-3), fundus uteri height (30-31). The proportion of mothers who did not work was 90 (22.1%), mothers who had a history of disease was 25 (6.1%) and mothers who had poor nutritional status was 34 (8.3%) **Click or tap here to enter text.**.

From the results of statistical tests, it was concluded that there was a significant relationship between maternal parity with birth weight (p value = 0.042) (R2 = 0.010 r = -0.101), history of disease with birth weight (p value = 0.042), height of fundus uteri with birth weight (p value = 0.010) (R2 = 0.016 r = 0.128), and maternal age, occupation, nutritional status and ANC had no significant relationship with birth weight. The factor that had the greatest influence (dominant) on birth weight was parity (Coefisien Beta of -0.133) **Click or tap here to enter text.**. Age greatly affects a mother's pregnancy. At productive age the success of getting pregnant with good conditions is very large. In terms of health and physical condition, productive age is the right time from a biological perspective to conceive and give birth with good quality. The risk of having a disabled baby and a low birth weight baby is less, the risk of miscarriage is also very low and the risk of experiencing health complications is also very low. Entering the age of 30 years, mothers should already have offspring because fertility will drop dramatically at the age of over 35 years **Click or tap here to enter text.**.

According to the researcher, based on the results of this study, it shows that maternal age does not have a significant relationship with the incidence of LBW in the General Hospital TK IV 07.01 Lhokseumawe, this can be seen in the results of research that have been obtained by researchers and have been presented in table 5.11 which shows that the majority of respondents in the General Hospital TK IV 07. 01 Lhokseumawe has a majority maternal age in the non-risk category, this shows a good condition where mothers have 20-35 years of age more than <20 years and >35 years so that mothers in this study have a great possibility to give birth to babies with healthy physical conditions with an ideal weight of 2500-4000 grams.

4.3.2. Relationship Between Preeclampsia/Eclampsia and the Incidence of Low Birth Weight (LBW)

Based on the results showed that of the 52 respondents who had preeclampsia/eclampsia, the majority of LBW were 38 people (27.5%). Of the 86 respondents who did not have preeclampsia/eclampsia, the majority were LBW, as many as 64 people (46.4%). The results of the bivariate test using Chi-Square obtained a p-value of 1.000> 0.05, meaning that there is no relationship between preeclampsia/eclampsia and the incidence of LBW at the General Hospital TK IV 07.01 Lhokseumawe in 2024. OR value = 0.933 < 1, which means that preeclampsia is not a factor that can increase the incidence of LBW by 0.9 times.

This study is not in line with the relationship of pre-eclampsia with the birth of low birth weight (LBW) in Sragen Regional Hospital **Click or tap here to enter text.**. The research design was an analytic observational with cross cross-sectional approach, which was conducted in RSUD Sragen on 22 April -31 May 2010. The population of this study was neonates born in the period 22 April-31 May 2010. Sampling technique used: total sample. The sample size was 44 samples that met the inclusion criteria, and the same number of babies born to mothers without preeclampsia were taken as controls. Data analysis using Chi Square correlation test and Prevalence Risk (RP). The results showed that the X2count value was 5.906 and the P value = 0.015, and compared with the X2 table with df = 1 and the error rate α = 0.05, the value was 3.847. Because the X2count> X2table value (5.906>3.847). The conclusion is that there is a significant relationship between pre-eclampsia and low birth weight (LBW) birth. The chance of LBW birth is 3.25 times higher than without pre-eclampsia. This indicates that pre-eclampsia is a risk factor for LBW.

According to the researchers, the results of this study indicate that preeclampsia and eclampsia do not have a significant relationship with the incidence of low birth weight (LBW) at the TK IV 07.01 Lhokseumawe General Hospital. This is evidenced by the research findings, which show that out of 138 respondents, there were 52 respondents with preeclampsia/eclampsia and only 38 respondents with LBW, while 14 others did not have LBW. The chi-square result showed a p-value of 1.000, leading to the conclusion that there is no relationship between the factors of preeclampsia/eclampsia and the incidence of LBW in this study. Based on the research results, it was also found that 14 babies (10.1%) did not experience low birth weight (LBW), but upon reviewing the mother's history, it turned out that the mother had experienced preeclampsia/eclampsia. There were 64 babies (46.4%) with LBW, but when reviewing the mother's history, it turned out that the mother did not experience preeclampsia/eclampsia. From the results obtained, it turns out that in this study, not all mothers who experienced preeclampsia/eclampsia gave birth to low birth weight (LBW) children. This is evidenced by 10.1% of mothers with preeclampsia/eclampsia giving birth to children with normal weight and 46.4% of mothers without preeclampsia/eclampsia giving birth to children with a weight below 2500 grams. The results of this study clearly show that there is no relationship between preeclampsia/eclampsia and the incidence of low birth weight infants at the TK IV 07.01 Lhokseumawe General Hospital in 2024.

4.3.3. Relationship Between Pregnancy Spacing and the Incidence of Low Birth Weight (LBW)

Based on the research results, it shows that out of 50 respondents with a risky pregnancy interval, the majority had low birth weight (LBW), with 34 people (24.6%). Out of 88 respondents with a non-risky pregnancy interval, the majority had low birth weight, with 68 people (49.3%). The results of the bivariate test using Chi-Square obtained a p-value of 0.322 < 0.05, meaning there is no significant relationship between the distance of pregnancy and the incidence of LBW at the TK IV 07.01 Lhokseumawe General Hospital in 2024. The OR value

= 0.625 > 1, which means that the distance of pregnancy is a factor that can increase the incidence of LBW by 0.6 times.

Based on the research results, it shows that 16 babies (11.6%) were not LBW, but when the pregnancy distance was reviewed, it fell into the risky category. As many as 68 babies (49.3%) were LBW and the pregnancy distance was in the non-risky category, a higher number compared to the babies who were not LBW, which were 20 babies (14.5%). From a theoretical perspective, mothers who are not at risk for pregnancy spacing should give birth to non-LBW babies. However, the research findings differ, indicating that there is no significant relationship between pregnancy spacing and the occurrence of LBW babies at the TK IV 07.01 Lhokseumawe General Hospital in 2024.

4.3.4. Relationship Between History of Premature Birth and the Incidence of Low Birth Weight (LBW)

Based on the research results, it shows that out of 103 respondents with a history of premature birth in the "yes" category, the majority were LBW (Low Birth Weight) with 82 people (59.4%). Out of 35 respondents with a history of premature birth in the "no" category, the majority were LBW, with 20 people (14.5%). The results of the bivariate test using Chi-Square obtained a p-value of 0.017 < 0.05, meaning there is a significant relationship between the history of premature birth and the incidence of LBW at the TK IV 07.01 Lhokseumawe General Hospital in 2024. The OR value = 2.929 > 1, which means that a history of premature birth is a factor that can increase the incidence of LBW by 2.9 times.

Maternal factors associated with the incidence of LBW in Indonesia. The research design used is cross-sectional and uses secondary data, namely, Riskesdas 2013. The sample for this study consisted of 25,186 children born between 2010 and 2013 who met the research criteria **Click or tap here to enter text.**. The significance of the relationship is assessed using a 95% Confidence Interval (CI) obtained from the chi-square test. Based on the analysis results, it was found that the prevalence of LBW (Low Birth Weight) in children born between 2010-2013 reached 5.2%. Maternal age at delivery, maternal education level, number of ANC (Antenatal Care) visits, gestational age, Fe tablet consumption, parity, and history of LBW births were significantly associated with the occurrence of LBW **Click or tap here to enter text.**.

4.3.5. Relationship Between Multiple Pregnancy and the Incidence of Low Birth Weight (LBW)

Based on the research results, it shows that out of 16 respondents with multiple pregnancies, the majority had low birth weight (LBW) with 16 people (11.6%). Out of 122 respondents without multiple pregnancies, the majority had low birth weight with 86 people (62.3%). The results of the bivariate test using Chi-Square obtained a p-value of 0.026 < 0.05, meaning there is a significant relationship between multiple pregnancies and the incidence of LBW at the TK IV 07.01 Lhokseumawe General Hospital in 2024. The OR value = 2.419 > 1, which means that multiple pregnancies are a factor that can increase the incidence of LBW by 2.4 times.

Risk factors associated with the incidence of LBW in neonates treated at RSUP Prof. Dr. R. D. Kandou Manado during the period January 2015-July 2016. The type of research is descriptive, retrospective with a field survey method. The research sample consists of neonate patients with low birth weight (LBW) who were treated in the Department of Child Health at RSUP Prof. Dr. R. D. Kandou Manado from January 2015 to July 2016. The research results show that based on maternal risk factors (age, parity, infection, premature birth, multiple pregnancies, and previous history of low birth weight), fetal and placental factors (congenital abnormalities), and environmental factors (smoking and alcohol), the most common risk factor identified is prematurity **Click or tap here to enter text.**.

4.3.6. Relationship Between Premature Rupture of Membranes and the Incidence of Low Birth Weight (LBW)

Based on the research results it show that out of 86 respondents with premature rupture of membranes, the majority were low birth weight (LBW) infants, totaling 66 people (47.8%). Out of 52 respondents without premature rupture of membranes, the number of LBW and non-LBW infants was balanced, with each group consisting of 36 people (26.1%). The results of the bivariate test using Chi-Square obtained a p-value of 0.439 < 0.05, meaning there is no significant relationship between premature rupture of membranes and the incidence of low

birth weight (LBW) at the TK IV 07.01 Lhokseumawe General Hospital in 2024. The OR value = 1.467 > 1, which means that premature rupture of membranes is a factor that can increase the incidence of LBW by 1.4 times.

According to the researcher, premature rupture of membranes does not pose a significant risk for the incidence of low birth weight infants at the TK IV 07.01 Lhokseumawe General Hospital in 2024, as evidenced by the research results obtained by the researcher with a p-value of 0.439 > 0.05. Out of 102 low birth weight infants (LBW), there were 66 cases diagnosed with premature rupture of membranes (PROM) and 36 cases without PROM. Among the 36 non-LBW infants, there were 20 cases of PROM and 16 cases without PROM. The conclusion that can be drawn from this research is that both low birth weight (LBW) and non-LBW infants have a higher history of premature rupture of membranes compared to those who did not experience premature rupture of membranes. This means that there is no significant relationship between premature rupture of membranes and the occurrence of LBW, as premature rupture of membranes generally occurs in pregnancies over 37 weeks.

Based on the research results, it shows that mothers who did not experience Premature Rupture of Membranes (PROM) had the same number of low birth weight (LBW) and non-LBW babies, with each group having 36 babies (26.1%). This indicates that there is no difference in the number of LBW and non-LBW babies. There were 20 non-LBW babies (14.5%) whose mothers were diagnosed with PROM. From the research results obtained in this study, it is clear that premature rupture of membranes does not pose a risk for the occurrence of low birth weight babies at TK IV 07.01 Lhokseumawe General Hospital in 2024.

Conclusions

Based on the results of research that has been conducted and the discussion presented in the previous chapter can be concluded that there is no significant influence between maternal age and the incidence of LBW in General Hospital TK IV 07.01 Lhokseumawe in 2024. There is no relationship between preeclampsia/eclampsia and the incidence of LBW in General Hospital TK IV 07.01 Lhokseumawe in 2024. There was no significant association between gestational distance and LBW in General Hospital TK IV 07.01 Lhokseumawe in 2024. There is a significant association between the history of preterm birth and the incidence of LBW in General Hospital TK IV 07.01 Lhokseumawe in 2024. There is a significant association between multiple pregnancy and LBW in the General Hospital TK IV 07.01 Lhokseumawe in 2024. There is no significant association between premature rupture of membranes and LBW in the General Hospital TK IV 07.01 Lhokseumawe in 2024.

It is suggested to respondents that the results of this study can be used as evaluation material for mothers and add insight into science and information on how to care for LBW and prevent risk factors, so that they can change their behaviour to prevent these risk factors. It is suggested to the Langkat City government that the results of this study are expected to be a reference for the government in the East Aceh Regency Region in improving public health status related to improving health and preventing the incidence of LBW. It is hoped that the results of the study can be used as reading material for libraries and can be used as a data source to add reference sources about risk factors for LBW, especially for female students.

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