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FACTORS RELATED TO THE INCIDENCE OF LBW (LOW BIRTH WEIGHT) IN TANJUNG PURA REGIONAL HOSPITAL, TANJUNG PURA DISTRICT, LANGKAT REGENCY YEAR 2023

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ABSTRACT

To evaluate a newborn's maturity and fetal growth, clinicians measure birth weight within an hour of delivery. A weight of less than 2,500 grams is categorized by the WHO as Low Birth Weight (LBW). While often associated with prematurity, LBW also occurs in full-term infants who experience growth limitations during the gestational period. The objective of this research was to determine the variables linked to low birth weight cases at Tanjung Pura Regional General Hospital throughout 2023. The study's participants included every mother who gave birth at the facility between May and June 2023. Utilizing hospital medical records, 39 mothers who fulfilled the specific inclusion requirements were selected as subjects. This investigation took place in 2023 within the Tanjung Pura District, specifically at the Langkat Regency's Regional General Hospital. A bivariate Chi-square test (95% CI) was utilized to examine how independent factors influenced the dependent variable, with significance set at $p < 0.05$. Results showed that maternal age significantly impacted low birth weight outcomes ($p = 0.020$), suggesting a statistically meaningful relationship between these two factors. At Tanjung Pura Regional General Hospital in 2023, both maternal age and parity were identified as significant determinants of low birth weight. The study's final analysis confirms that these two maternal factors are closely interconnected with the incidence of infants born weighing less than 2,500 grams.

Keywords: *Low Birth Weight (LBW), Maternal Age, Maternal Parity, Knowledge, Attitude*

Introduction

Body weight refers to changes in body composition, including bone mass, muscle tissue, adipose tissue, body fluids, and other components. It is widely used as an indicator of a child's nutritional status as well as growth and developmental progress. In newborns, birth weight assessment serves as a key measure for evaluating neonatal condition, allowing infants to be classified as having low birth weight (LBW) or normal birth weight (NLBW)(Oktavia, 2018).

As a primary indicator of fetal development and neonatal health, birth weight must be documented within the first hour post-delivery. The established threshold for Low Birth Weight (LBW) by the WHO is a mass of less than 2,500 grams. This condition may occur not only in preterm infants but also in full-term newborns who experience intrauterine growth restriction during pregnancy (Organization, 2014).

To meet the criteria for low birth weight, a newborn's weight taken within the first hour after birth must be less than 2,500 grams. This classification applies to

all infants regardless of whether they were born pre-term or full-term. Low birth weight (LBW) reflects either restricted fetal growth during pregnancy or a reduced duration of gestation, resulting in a birth weight below the expected standard.

An infant is considered Extremely Low Birth Weight (ELBW) if they weigh less than 1,000 grams. Meanwhile, the range between 1,000 and 1,500 grams is classified as Very Low Birth Weight (VLBW), both of which are critical subdivisions of the broader LBW definition. In general, LBW is associated with incomplete gestational age or prematurity. Even when a pregnancy reaches its full term of approximately 38 weeks, an infant may still be classified under dysmaturity if their weight is disproportionately low for their gestational age, typically defined as being below 2,800 grams (Cutland *et al.*, 2017)

One of the main causes of morbidity and mortality is infants with low birth weight or low birth weight (LBW). the complications that cause the most death in infants are asphyxia, low birth weight (LBW) and infections in infants. Data from the World Health Organization (WHO) shows that around 20 million low birth weight (LBW) babies are born each year which can be caused by premature births or stunted fetal development while in the womb. The prevalence of LBW in Indonesia ranges from 2 to 17.2% and accounts for 29.2% of the AKN (Wahyuni, R; Sembiring, I, S; Rinayanti, 2020).

Research Method

The researcher adopted a quantitative cross-sectional design, conducting one-time observations and measurements for all study variables. The purpose of this study is to determine the relationship between the independent and dependent variables (Setiawan, 2021).

Result

UNIVARIATE ANALYSIS

Table 1. Distribution of maternal ageinTanjung Pura Regional Hospital in 2023

Mother's Age	Amount	%
No Risk (20-35 years)	12	30.8
At risk (<20, >35 years)	27	69.2
Amount	**39**	**100**

Based on Table 1, out of 39 respondents, the majority 27 individuals (69.2%) were identified as being at risk due to maternal age.

Table 2. Distribution of maternal parityinTanjung Pura Regional Hospital in 2023

Parity	Amount	%
No Risk	16	41
At risk	23	59
Amount	**39**	**100**

Based on Table 2, among the 39 respondents, most—23 individuals (59%)—were found to be at risk due to maternal age.

Table 3. Distribution of maternal pregnancy intervalsinTanjung Pura Regional Hospital in 2023

Pregnancy Spacing	Amount	%
No Risk	18	46.2
At risk	21	53.8
Amount	**39**	**100**

Based on Table 3, out of 39 respondents, the majority 21 individuals (53.8%) were identified as having high-risk pregnancy intervals.

Table 4. Distribution of maternal employment statusinTanjung Pura Regional Hospital in 2023

Employment Status	Amount	%
Work	16	41
Doesn't work	23	59
Amount	**39**	**100**

Based on Table 4, among the 39 respondents, most 23 individuals (59%) were found to be unemployed.

Table 5. Distribution of birth weight of babiesinTanjung Pura Regional Hospital in 2023

Baby's birth weight	Amount	%
BBLN	15	38.5
Low birth weight	24	61.5
Amount	**39**	**100**

Based on Table 5, out of 39 respondents, the majority 24 individuals (61%) were identified as having low birth weight.

Table 6. The relationship between maternal age and the incidence of LBW inTanjung Pura Regional Hospital in 2023.

Mother's Age	Low Birth Weight Incident				Total		*p-value*
	BBLN		Low birth weight				
	N	%	N	%	N	%	
No Risk	8	20.5	4	10.2	12	30.7	0.020
Risk	7	17.9	20	51.2	27	69.3	
Total	15	38.5	24	61.5	39	100	

The analysis identified that 51.2% of LBW instances (20 participants) were linked to at-risk maternal ages. Conversely, mothers in the safe age bracket

predominantly delivered infants of normal weight, with only 7 respondents (17.9%) from the non-risk group having LBW infants. With a p-value of 0.020, the Chi-square analysis demonstrates a statistically significant relationship between a mother's age and low birth weight outcomes at this facility.

Discussion

Maternal age was identified as a key determinant for LBW in this study, with Chi-square analysis showing a significant link (p = 0.020). These findings at Tanjung Pura Regional Hospital demonstrate that the age of the mother at delivery is closely tied to the infant's birth weight outcomes.

The results of this study are different from the results of the study conducted by Nur Laeli Rokhmah with the research title The Relationship between Maternal Age and the Incidence of Low Birth Weight Babies at PKU Muhammadiyah Hospital in 2018 with the results of statistical tests with the chi square test showing a correlation coefficient of 0.004 and a p value of 0.982. This shows that the p value> 0.05 so that H0 is accepted and Ha is rejected meaning there is no relationship between maternal age and the incidence of Low Birth Weight (LBW) (Rokhmah, 2018).

Complications during pregnancy and childbirth are statistically lower for women within the 20–35 age range. This 'safe zone' for reproduction is characterized by fully developed reproductive systems, making it the most favorable time for a healthy pregnancy compared to higher-risk age groups. In contrast, mothers over 35 years are considered to be in the unhealthy reproductive age group, as reproductive function may decline, increasing the risk of pregnancy and childbirth complications, including the delivery of low birth weight infants (Manuaba, I. A. C., 2018).

Infant Mortality Rate (IMR) is a health indicator included in one of the targets of the Sustainable Development Goals (SDGs). SDGs target that every country that has committed in the SDGs must be able to reduce two-thirds of infant mortality in 2030. Infant Mortality Rate (IMR) in Indonesia is 23 per 1000 live births. AKB of the Special Region of Yogyakarta (DIY) is at 25 per 1000 live births. Common causes of infant mortality in DIY are the weight of low birth weight babies (LBW) and sepsi (Wahyuni, Christina and Herawati, 2019).

A high-risk pregnancy is a condition that can affect the condition of the mother and fetus during the pregnancy. A high-risk pregnancy is a pregnancy that can cause the pregnant mother and baby to become sick or die before birth. The characteristics of pregnant women are known that important factors causing high risk in pregnancy occur in the age group of 35 years, which is said to be an unsafe age because when reproducing at the age of 35 years where the condition of the female reproductive organs has experienced a decline in the ability to reproduce, height less than 145 cm, weight less than 45 kg, the gap between the last child and the current pregnancy is less than 2 years, the number of children is more than 4. Factors causing risk in pregnancy if not immediately addressed in the mother can threaten safety and even the worst thing can happen, namely the death of the mother and baby (Sembiring, 2019).

The results of this study are in line with research conducted by Minda Septiani, Maria Ulfa, in 2018. This study shows that there is a relationship between maternal age during pregnancy and LBW with a p value of 0.008, which means there is a significant relationship between maternal age during pregnancy and LBW. The OR (Odd Ratio) results are 5.231, which means that the age at risk of pregnancy (<20 years and> 35

years) has a 5 times greater risk of giving birth to LBW compared to pregnant women aged 20 to 35 (ages that are not at risk) (Septiani, Minda; Ulfa, 2018).

It is assumed that a mother's age significantly dictates the risk of LBW at Tanjung Pura Regional Hospital. The research identifies the 20–35 age range as the safest period for childbirth due to matured reproductive organs. Conversely, advanced maternal age (over 35) is viewed as a high-risk factor because declining reproductive capacity often correlates with growth limitations in the fetus, leading to lower birth weights.

The researcher's assumption in this study is based on the results of statistical tests conducted by the researcher in this study, it was found that the safest age for pregnancy and childbirth is between 20 and 35 years old because it is included in the healthy reproductive age group. Mothers included in the healthy reproductive age group have reproductive organs that are capable of pregnancy and childbirth and have not experienced a decline in reproductive organ function that can cause complications during pregnancy or childbirth. Mothers in the unhealthy reproductive age group, namely those aged > 35 years, have reproductive organs that have experienced a decline in function so that they are at risk of complications during pregnancy and childbirth, including the birth of low birth weight (LBW). Therefore, in this study, maternal age has a significant influence on the occurrence of low birth weight (LBW).

Conclusion And Suggestion

Significant relationships between several maternal indicators and LBW cases were documented in this 2023 investigation. The analysis underscores the importance of addressing these maternal risk factors to improve birth weight statistics at Tanjung Pura Regional Hospital. Specifically, maternal age, parity, pregnancy interval, and employment status were all significantly related to the occurrence of LBW in newborns.

Suggestion

For Tanjung Pura Regional Hospital : Enhance the competencies of healthcare staff to provide high-quality services that meet the needs and satisfaction of pregnant women. Advancing the quality of prenatal and delivery services is projected to act as a preventive measure against LBW. It is expected that through optimized hospital care, the incidence of low birth weight can be significantly curtailed over time.

For Future Researchers: It is recommended to explore additional variables, such as alternative interventions for managing LBW cases and the alignment of relevant regulations with the specific circumstances of the respondents.

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