

The Relationship between Low Newborn Baby Weight (Bblr) and the Incident of Neonatal Asphyxia

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ABSTRACT

Low birth weight (LBW) is a significant factor contributing to neonatal asphyxia, a critical condition occurring during the neonatal period. This study aims to investigate the correlation between LBW and the incidence of neonatal asphyxia at Permata Madina General Hospital, located in Panyabungan District, Mandailing Natal Regency in 2023. Employing an analytical survey method with a cross-sectional approach, the study population comprised 48 patients at the hospital. Samples were selected using a total sampling technique. Data analysis involved univariate and bivariate analyses, including frequency distribution and the Chi-Square test. Results revealed that 20 respondents (41.7%) had low birth weight babies, with the majority of cases of neonatal asphyxia occurring in this group (15 respondents, 31.3%). Statistical analysis indicated a significant relationship between LBW and neonatal asphyxia at Permata Madina General Hospital in 2023, with a p-value of 0.002 ($p < 0.05$). The findings suggest that babies with low birth weight are at greater risk of experiencing asphyxia compared to those with normal birth weight. The study emphasizes the importance of enhancing the quality of healthcare services in hospitals to facilitate early detection and treatment of LBW infants, thereby reducing the incidence of neonatal asphyxia among this vulnerable population.



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INTRODUCTION

The prevalence of LBW is estimated at 15% of all births in the world with a limit of 3.35% - 38% and occurs more often in developing or low socio-economic countries. Statistics show that 90% of LBW cases occur in developing countries and the death rate is 35 times higher than for babies with a birth weight lower than 2500 grams. Asphyxia is a condition in newborn babies who experience failure to breathe spontaneously and regularly immediately after birth, so that the baby cannot take in oxygen and cannot take in oxygen and cannot remove carbonic acid from the body, so that it can reduce O₂ (oxygen) and possibly increase CO₂ (carbon dioxide) which has bad consequences in the future. According to the World Health Organization (WHO), in particular in the world there are 10,000,000 deaths of newborn babies, especially neonates, per year, around the world around 25% of all neonatal deaths are caused by asphyxia, in Ethiopia the first cause of neonatal death is asphyxia (31.6%), more specifically the Amhara region in Ethiopia contributes to the highest neonatal infant mortality rate (47/1000 live births) compared to the other nine regions found in Ethiopia (Woday, Muluneh & St Denis, 2019).

In Mandailing Natal Regency, the Infant Mortality Rate (IMR) is the number of deaths of infants under 1 year of age. The calculation method is the number of deaths of babies under the age of 1 year in a certain area during one year compared to the number of live births in the same area and time period per 1000 live births. The infant mortality rate is used for

describes the level of health problems related to factors causing infant mortality, the level of antenatal care, the nutritional status of pregnant women, the success rate of MCH and family planning programs and environmental conditions of babies, the level of antenatal care, the nutritional status of pregnant women, the success rate of MCH and family planning programs and environmental conditions. Neonatal Asphyxia is one of the problems that the government is paying attention to because the incidence rate is still high in Indonesia. LBW babies affected by newborns are one of the causes of the large number of cases of Asphyxia Neonatorum, the cause being the occurrence of LBW babies with the incidence of Asphyxia Neonatorum with the baby's weight being less than the normal limit, the occurrence of umbilical cord entanglement in babies and so on.

The results of an initial survey of the number of patients experiencing Neonatal Asphyxia at Permata Madina General Hospital showed that there were 10 Asphyxia sufferers from January 2022 to December 2022. 7 experienced neonatal asphyxia due to the entanglement of the baby's umbilical cord and the baby's weight being less than the normal limit, and 3 did not experience neonatal asphyxia because they did not experience problems during delivery. Therefore, the author is interested in conducting research on Neonatal Asphyxia at Permata Madina RSU. Based on the background description above, the author is interested in conducting research on "The Relationship between Low Newborn Baby Weight and the Incident of Neonatal Asphyxia" at Permata Madina General Hospital, Panyabungan District, Mandailing Natal Regency, 2022

METHODS

Research Techniques

This type of research is an analytical survey method, namely research carried out on a group of research objects with the aim of looking at phenomena that occur in certain populations. The location of this research is Permata Madina General Hospital, Panyabungan District, Mandailing Natal Regency. This research was conducted by researchers from January 2023. The research instrument is used to obtain data that is relevant to the problem under study, namely using a data collection instrument in the form of secondary medical record data.

RESULTS AND DISCUSSION

Discussion of results

Univariate Analysis Results

Permata Madina Panyabungan Hospital provides various types of medical services, both outpatient and inpatient, including: Medical Check Up, Outpatient, inpatient, supporting services, 24 hour emergency room which is equipped with the best facilities so that the quality of service is excellent and the best. Permata Madina Hospital is also equipped with the Best Facilities. The sample taken was the total population using a total sampling technique, meaning that the entire population was sampled, totaling 48 people.

Table 1. Characteristics of Respondents at Permata Madina General Hospital, Panyabungan District, Mandailing Regency, Natal 2022

No	Demographic Data	Frequency	Percentage(%)
1	Age		
	≤20 years	7	14.6
	21-35 years old	31	64.6
	>35 years	10	20.8
	Amount	48	100
2	Education		
	elementary school	2	4.2
	JUNIOR HIGH SCHOOL	18	37.5
	SENIOR HIGH SCHOOL	23	47.9
	College	5	10.4

Amount	48	100
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Based on table 1, above, it is known that the characteristics of respondents based on age, the majority of respondents are between 21-35 years old, 31 respondents (64.6%), with the educational level of the majority of respondents graduating from high school (SMA), namely 23 respondents (47.9%). %).

Table 2. Frequency Distribution of Low Birth Weight Babies at Permata Madina General Hospital, Panyabungan District, Mandailing Regency, Natal 2022

No	Low Birth Weight Babies	Frequency	Percentage (%)
1	LBW	20	41.7
2	Not LBW	28	58.3
	Amount	48	100.0

Based on table 2, it is known that the incidence of babies with low birth weight (LBW) at Permata Madina General Hospital in 2022 was 20 respondents (41.7%), and those who were not LBW were 28 respondents (58.3%).

Table 3. Frequency Distribution of Neonatal Asphyxia Incidents at Permata Madina General Hospital, Panyabungan District, Mandailing Regency Natal Year 2022

No	Asphyxia Incident Neonatorum	Frequency	Percentage (%)
1	Asphyxia	23	47.9
2	Not Asphyxia	25	52.1
	Amount	48	100.0

Based on table 3, it is known that the incidence of Neonatal Asphyxia at Permata Madina General Hospital in 2022 was 23 respondents who experienced asphyxia (47.9%), and 25 respondents did not experience asphyxia (52.1%).

Bivariate Analysis

Data analysis of the relationship between low birth weight babies and the incidence of neonatal asphyxia at Permata Madina General Hospital, Panyabungan District, Mandailing Natal Regency, 2022 can be seen in table 4.4 below.

Table 4. Cross Tabulation of the Relationship between Low Birth Weight Babies and the Incidence of Neonatal Asphyxia

No	Low Birth Weight Babies	Asphyxia Incident				Total		<i>P-value</i>
		Yes		No				
		f	%	F	%	f	%	
1.	LBW	15	31.3	5	10.4	20	41.7	0.002
2.	Not LBW	8	16.7	20	41.7	28	58.3	
Total		23	47.9	25	52.1	48	100.0	

Based on table 4, it was found that of the 48 respondents, 15 respondents (31.3%) had low birth weight babies who experienced neonatal asphyxia and 8 respondents (16.7%) who were not LBW experienced neonatal asphyxia. Meanwhile, low birth weight babies who did not experience asphyxia were 5 respondents (10.4%) and LBW babies who did not experience asphyxia were 20 respondents (41.7%). The results of the Chi-Square test analysis show that the significant p value is 0.002. Because the p value is smaller than 0.05 ($0.001 < 0.05$), the hypothesis is accepted so that in this study there is a significant relationship between low birth weight babies and the incidence of neonatal asphyxia at Permata Madina General Hospital, Panyabungan District, Mandailing Natal Regency in 2022. From the description above, it can be seen that although prematurity is one of the causes of LBW, it is not always the main cause. Therefore, it is very important to maintain pregnancy, both in mothers who are at risk and not at risk, to obtain a healthy pregnancy and safe delivery. So it is recommended to families to improve the family's economic status, monitor pregnant women carefully and regularly, carry out consultations on diseases that can cause preterm birth, consume nutritious food for pregnant women so that the risk of low birth weight babies can be prevented. This is because the perinatal death rate for LBW babies is twice as high as the death rate for normal babies.

CONCLUSION

Based on the description of the results and discussion, it can be concluded that, babies with low birth weight at Permata Madina General Hospital, Panyabungan District, Mandailing Natal Regency in 2022 were 20 respondents (41.7%). The majority of cases of neonatal asphyxia at Permata Madina General Hospital, Panyabungan District, Mandailing Regency, Natal 2022, occurred in babies with low birth weight, 15 respondents (31.3%), there was a significant relationship between low birth weight babies and the incidence of neonatal asphyxia at Permata General Hospital. Madina, Panyabungan District, City of Mandailing Regency, Natal in 2022, with a p value = 0.002 ($p < 0.05$). The risk of asphyxia in babies with low birth weight is greater than babies with normal birth weight.

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