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The Relationship Between Age And Parity Of Laboring Mothers With The Incidence Of Low Birth Weight (LBW) At Arjawinangun Hospital

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ABSTRACT
The incidence of low birth weight (LBW) needs to be prevented because it is one of the causes of death that contributes to increasing the infant mortality rate (IMR). Several factors of LBW need to be assessed and researched including maternal age and parity. From the results of the study at Arjawinangun Hospital, it was found that the number of delivery services in the VK Room was 1793 mothers, 179 LBW babies, 8 maternal deaths and only 1 IMR due to asphyxia. This study aims to relate the age and parity of laboring mothers with the incidence of Low Birth Weight (LBW) at Arjawinangun Hospital. The research method used quantitative research with a cross sectional approach. The population was 1,793 babies with a sample size of 95 babies with simple random sampling technique. The data collection used secondary data in the form of medical records and the data analysis used the chi square test at α = 0.05. The results showed that out of 95 respondents (51.6%) babies at Arjawinangun Hospital had LBW, the age of the laboring mother was 20-35 years (41.1%) and the parity of the laboring mother was multipara (52.6%). There is a relationship between age (ρ value = 0.000) and parity (ρvalue = 0.045) with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency.

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INTRODUCTION

Infant mortality rate (IMR) is one of the important indicators in determining the degree of public health. The global IMR is still relatively high at 37 per 1000 live births. IMR in the Association of Southeast Asian Nations (ASEAN) countries in 2015, Singapore 2 per 1000 live births, Brunei Darussalam 9 per 1000 live births, Malaysia 6 per 1000 live births, Thailand 11 per 1000 live births, Vietnam 17 per 1000 live births, Philippines 22 per 1000 live births, Indonesia 22 per 1000 live births (Kementerian Kesehatan RI, 2022).

According to the World Health Organization (WHO) report in 2020, neonatal deaths accounted for 45% of deaths under five years old in 2015. The main causes of neonatal mortality are birth complications of low birth weight (LBW) at 16% intrapartum related complications 11%, sepsis 7%, congenital anomaly 5%, pneumonia 3%, others 3%, tetanus 1%, LBW is the world's first cause of infant mortality in the early period of life. LBW

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accounts for 60% to 80% of all neonatal deaths. The global prevalence of LBW is 20 million per year or 15.5% of all babies born in the world (World Health Organization, 2020).

LBW is a baby with a birth weight of 2,500 grams or less. Infants with low birth weight (LBW) can experience various complications. LBW is a baby who is born with a body weight lower than the average baby weight. A baby is declared LBW if it weighs less than 2.5 kilograms, while the normal baby weight is above 2.5 or 3 kilograms. Meanwhile, babies born weighing less than 1.5 kilograms are declared to have very low birth weight (Kementerian Kesehatan RI, 2017).

A woman's healthy reproductive age for pregnancy is 20-35 years old. This age is considered the safest and healthiest relative limit in terms of maternal reproduction and can maintain well during pregnancy (Minannisa, 2019). According to the revised research results (Dhea et al., 2021) said that the age of less than 20 years who undergo pregnancy from a physical and mental perspective will experience problems. Physically, the condition of the pelvis and uterus has not developed and causes pain and death for the mother and baby and the mother's physical growth and development will be stopped / inhibited. As well as from a mental perspective, the mother is not ready to undergo pregnancy and changes during pregnancy, is not ready to become a mother and is not ready to face the problems that will occur in the household.

Parity is the number of children who have been born alive, which is a condition that describes the birth of a group or several groups of women during the reproductive period. Classification of parity Primiparous women who have given birth to a child, who is large enough to live in the outside world. Multiparous is a woman who has given birth to a baby several times (up to 5 times). Grandemultiparous is a woman who has given birth to a baby 6 times or more alive or dead. The safest parity in terms of maternal and perinatal mortality is parity 2-3. Parity 1 and > 4 have a higher maternal mortality rate (Mitayani, 2020).

Labor is the process of opening and thinning the cervix, from the fetus down into the birth canal. Birth is the process by which the fetus and amniotic fluid are pushed out through the birth canal (Putri et al., 2021). Based on data from the West Java provincial health office in 2020, it was 2.4%. For the City District, the highest Low Birth Weight (LBW) is in Bandung City (7.52%) and Kuningan Regency (5.7%) while the lowest percentage is in Sukabumi Regency at 0.36% (Dinas Kesehatan Jawa Barat, 2023).

Based on the results of weighing newborn babies (47,771 babies) in 2021, 1,504 people (3.1%) were babies with low birth weight (LBW). Compared to 2020, the proportion of LBW remains 3.1% but the number has increased. In 2017 the number of LBW was 1,478 (3.1%) (Dinas Kesehatan Kabupaten Cirebon, 2023).

The results of preliminary studies conducted at Arjawinangun Hospital obtained data that the number of women who came and received delivery services in the VK room for the 2020 period, the number of mothers in labor was 1793 mothers, 179 LBW babies, 8 maternal deaths and only 1 IMR due to asphyxia. Based on this, it can be concluded that every woman in labor is likely to experience complications due to her pregnancy, and it is all caused by factors that affect maternity mothers. Therefore, the authors are very interested in conducting research with the title “The Relationship between Age and Parity of Laboring

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Mothers with the Incidence of Low Birth Weight (LBW) at Arjawinangun Hospital, Cirebon Regency".

METHODS

The type of research method chosen is analytical descriptive, while the definition of analytical descriptive method according to is a method that serves to describe or give an overview of the object under study through the collected data or samples as it is without analyzing and making conclusions that apply to the public (Heryana, 2019). This study was used to obtain accurate data on the relationship between age and parity of laboring mothers with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency. This design uses a cross sectional research design. The population of this study were all mothers who gave birth at Arjawinangun Hospital, Cirebon Regency. The sample in this study was using the slovin formula where the slovin formula is a formula or formula used to calculate the minimum sample size when the behavior of a population is not known with certainty. The sample was 95 respondents using simple random sampling technique. The independent variables in this study were maternal age and parity of laboring mothers. The dependent variable in this study was the incidence of Low Birth Weight (LBW). This study used a data collection sheet for observations obtained from medical records (check list). The type of data in this study was secondary data taken from the medical records of laboring mothers at Arjawinangun Hospital. Data analysis used in this study was univariate analysis using frequency distribution. Bivariate analysis was conducted to determine the relationship between the independent variable and the dependent variable. In this analysis using chi-square statistical test.

RESULTS

The results of this study are described in the form of tables and narratives as follows:

Table 1 Frequency Distribution of Low Birth Weight (LBW) at Arjawinangun Hospital Cirebon Regency

Incidence of Low Birth Weight (LBW)	Frequency (F)	Percent (%)
Yes	49	51.6
Not	46	48.4
Total	95	100.0

Table 1 shows that 49 babies (61.6%) experienced LBW and 46 babies (48.4%) did not experience LBW. This shows that more than half (51.6%) of infants at Arjawinangun Hospital, Cirebon Regency, experienced LBW.

Table 2 Frequency Distribution of Maternal Age at Arjawinangun Hospital, Cirebon Regency

Age of Birth Mother	Frequency (F)	Percent (%)
< 20 years	18	18.9
20-35 years	39	41.1
> 35 years	38	40.0

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Age of Birth Mother	Frequency (F)	Percent (%)
Total	95	100.0

Table 2 shows that there were 18 maternity mothers aged < 20 years (18.9%), 39 maternity mothers aged 20-35 years (41.1%) and 38 maternity mothers aged < 35 years (40.0%). This shows that most of the maternity mothers at Arjawinangun Hospital, Cirebon Regency are 20-30 years old (41.1%).

Table 3 Frequency Distribution of Parity of Maternity Mothers at Arjawinangun Hospital, Cirebon Regency

Maternity Parity	Frequency (F)	Percent (%)
Primipara	38	40.0
Multipara	50	52.6
Grande	7	7.4
Total	95	100.0

Table 3 shows that there were 38 (40.0%) primiparous mothers, 50 (52.6%) multiparous mothers and 7 (7.4%) grandparents. This shows that most of the parity of laboring mothers at Arjawinangun Hospital, Cirebon Regency is multiparous (52.6%).

Table 4 Relationship between Maternal Age and the Incidence of Low Birth Weight (LBW) at Arjawinangun Hospital, Cirebon Regency

No	Age of Birth Mother	ncidence of Low Birth Weight (LBW)				Amount		ρ value
		Yes		Not				
		N	%	n	%	N	%	
1	< 20 years	4	22,2	14	77,8	18	100	
2	20-35 years	39	100	0	0	39	100	0,000
3	> 35 years	6	15,8	32	84,2	38	100	
	Jumlah	49	51,6	46	48,4	95	100	

Based on the results in table 4 shows that the proportion of laboring mothers whose age is < 20 years and their babies are LBW is 22.2%, while the proportion of laboring mothers whose age is 20-35 years and their babies are LBW is 100% and whose age is > 35 years and their babies are LBW is 15.8%. Statistical test with chi square obtained ρ value = 0.000 which means ρ value < α value (0.05) thus it can be stated that there is a relationship between the age of the delivery mother with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency.

Table 5 Relationship between the Parity of the Delivery Mother and the Incidence of Low Birth Weight (LBW) at Arjawinangun Hospital, Cirebon Regency

No	Maternity Parity	ncidence of Low Birth Weight (LBW)				Amount		ρ value
		Yes		Yes				
		N	%	n	%	N	%	
1	Primipara	24	63,2	14	36,8	38	100	0,045

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No	Maternity Parity	ncidence of Low Birth Weight (LBW)				Amount		ρ value
		Yes		Yes				
		N	%	n	%	N	%	0,045
2	Multipara	24	48,0	26	52,0	50	100	
3	Grande	1	14,3	6	85,7	7	100	
	Jumlah	49	51,6	46	48,4	95	100	

Based on the results in table 5 shows that the proportion of laboring mothers whose parity is primiparous and their babies are LBW is 63.2%, while the proportion of laboring mothers whose parity is multiparous and their babies are LBW is 48.0% and whose parity is grande and their babies are LBW is 14.3%. Statistical test with chi square obtained ρ value = 0.045 which means ρ value < α value (0.05) thus it can be stated that there is a relationship between parity of laboring mothers and the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, 2021.

Discussion

Based on the results of the study, it shows that there is a relationship between the age of the delivery mother and the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, as evidenced by ρ value = 0.000. The results of this study are in line with research (Dhea et al., 2021) saying that the age of less than 20 years who undergo pregnancy from a physical and mental perspective will experience problems. Physically, the condition of the pelvis and uterus has not developed and causes pain and death for the mother and baby and the mother's physical growth and development will be stopped / inhibited. As well as mentally, the mother is not ready to undergo pregnancy and changes during pregnancy, is not ready to become a mother and is not ready to face the problems that will occur in the household.

The age factor recommends that the age most considered safe to undergo pregnancy and childbirth is 20 to 35 years. The highest percentage of low birth weight babies are found in the adolescent group and women over 40 years old. Mothers who are too young are often physically and emotionally immature. Whereas in old mothers, although they are experienced, their body condition and health have begun to decline so that they can affect the intra-uterine fetus and can cause LBW birth (Rusliani et al., 2022).

Maternal age is one of the factors that cause low birth weight babies. In this study, it can be seen that there is a relationship between maternal age and the incidence of LBW. Although the age of 20-35 years is recommended as a healthy reproductive age, which is a safe age for pregnancy and childbirth. However, the age of the mother during pregnancy affects the maturity of the reproductive organs and is also related to psychological conditions, especially readiness to accept pregnancy.

Based on the results of the study, it shows that there is a relationship between parity of laboring mothers with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, as evidenced by ρvalue = 0.045. This is in accordance with research (Sari et al., 2018) which states that there is a relationship between parity and the incidence of LBW, where mothers with parity 1 and > 3 are at risk of giving birth to LBW by 1.96 times.

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Mothers with parity 1 and > 4 are at risk of giving birth to LBW, in relation to primiparas who have not had previous experience in pregnancy and childbirth so that there can be a lack of nutritional status that causes anemia and affects the weight of the baby being born, lack of ANC visits and inadequate knowledge of care during pregnancy and mental readiness to accept pregnancy is reduced, While mothers who have given birth to children> 4 are more likely to experience LBW because of the presence of scar tissue due to previous pregnancies and childbirth which results in inadequate blood supply to the placenta so that placental attachment is not perfect, the placenta becomes thinner, covers a wider uterus and disrupts the distribution of nutrients from the mother to the fetus so that the distribution of nutrients from the mother to the fetus becomes obstructed or insufficient to meet the needs of the fetus which can cause further growth disorders which will eventually give birth to babies with LBW (Manuaba, 2017).

In this study there was a significant relationship between parity and the incidence of LBW but apart from the risky parity 1 and > 3 gave birth to LBW babies 19 (65.5%), at parity 2-3 the results of mothers who gave birth to LBW were higher 24 (36.9%) this was influenced by maternal age factors> 35 years. At the age of over 35 years there has been a decline in physiological and reproductive functions in general which results in the process of fetal development not being optimal and producing children born with low body weight (Hidayat, 2018).

In line with a study conducted (Saragih, 2020) which states that parity is associated with the incidence of LBW (ρ value = 0.02) obtained from the results of multivariate logistic regression analysis. This is also in accordance with research conducted by (Wijayanti & Pangestu, 2020) which states that there is a relationship between parity and the incidence of LBW where mothers with parity 4 have a risk of giving birth to LBW 1.68 times. Referring to the results and theory above related to parity is not at risk but giving birth to LBW babies this is due to other factors such as lack of nutritional intake, lack of iron which causes anemia respondents which can cause LBW. While respondents who have parity are not at risk of giving birth to LBW because the organ function is ready to maintain pregnancy and accept the presence of the fetus, the mother's skills to carry out self-care and her baby.

CONCLUSION

Based on the results of research conducted on the relationship between age and parity of laboring mothers with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, it can be concluded that out of 95 respondents more than half (51.6%) of infants at Arjawinangun Hospital, Cirebon Regency experienced LBW, most of the age of laboring mothers were 20-35 years old (41.1%) and most of the parity of laboring mothers were multiparous (52.6%). There is a relationship between the age of laboring mothers with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, as evidenced by ρ value = 0.000. There is a relationship between parity of laboring mothers with the incidence of low birth weight (LBW) at Arjawinangun Hospital, Cirebon Regency, as evidenced by ρ value = 0.045. The hospital needs to improve services to pregnant women and maternity to prevent the incidence of LBW, namely by increasing fetal growth

monitoring in suspected cases in mothers of at-risk age and at-risk parity, ensuring pregnant women have regular pregnancy checks so that they can prepare for labor smoothly and normally.

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