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Overview the Levels and Risk Factors of LBW Incidents at Pasar Minggu Hospital Jakarta

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Abstract. Low birth weight (LBW) babies are defined as babies with a birth weight of less than 2500 grams. Although LBW only constitutes 6% to 7% of all births, it accounts for more than 70% of neonatal deaths. Intrauterine Growth Restriction (IGR) is the main cause of LBW in developing countries. Low birth weight babies have complex impacts until adulthood, potentially becoming an economic burden on individuals and society. Babies with low birth weight tend to experience slow cognitive development, weak neurological function and have poor performance in the educational process. Factors that cause LBW can come from maternal factors and/or fetal factors. This research is descriptive observational in nature. Data were secondary data from patient medical records at Pasar Minggu Regional General Hospital, East Jakarta. The sampling technique in this study was total sampling, namely by taking all medical record data that met the inclusion criteria, obtaining 196 samples. The majority samples were: babies weighing 1500-2500g (80.1%), female (56.1%), more often found in mothers who gave birth between the ages of 20 - 35 years (63.3%) , primipara (51.1%) and preterm gestational age (88.8%).

Keywords : Intrauterine Growth Restriction; Low Birth Weight; Preterm; Primipara

INTRODUCTION

United Nations Children's Fund and World Health Organization (2004: 6) states a newborn's weight at birth is an important marker of maternal and fetal health and nutrition. Low birthweight newborns have a higher risk of dying in the first 28 days of life. Those who survive are more likely to suffer from stunted growth. Ministry of Health of the Republic of Indonesia (2017:124) states Infant and toddler deaths due to problems that occur in newborns or neonatal (aged 0-28 days), contribute to around 59% of the causes of infant mortality. The results of the 2015 Intercensal Population Survey (IPS) showed that the IGR was 22,5023 per 1000 live births, which has reached the 2015 Millennium Development Goals (MDG) target of 23 per 1000 live births. Furthermore, the Under-five Mortality Rate (U5MR) from the 2015 IPS was 26,29 per 1000 live births, also has reached the 2015 MDG target of 32 per 1000 live births.

Gowen, Jr. (2023: 228) states Low birth weight babies (LBW) are defined as babies with a birth weight of less than 2500 grams. Although LBW only accounts for 6% to 7% of all births, it contributes to more than 70% of neonatal deaths. Intrauterine Growth Restriction (IGR) is the main cause of LBW in developing countries, while in developed countries it is due to prematurity. United Nations Children's Fund and World Health Organization (2004: 6) define based on its degree, LBW can be classified into three groups, namely: Low Birth Weight Babies with a birth weight of less than 2500 grams; Very Low

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Birth Weight Babies with a birth weight of less than 1500 grams; Extremely Low Birth Weight Babies with a birth weight of less than 1000 grams.

Jornayvaz, et al. (2016: 73) and Jańczewska et al (2023: 1599) states low birth weight has complex impacts until adulthood, including increasing the risk of coronary heart disease, diabetes, metabolic and immune disorders and physical endurance disorders that have the potential to become an economic burden for individuals and society. Babies with low birth weight tend to experience slow cognitive development, weak neurological function and have poor performance in their education process.

Sharma and Sunita (2013: 39) and Cuningham, et al. (2013: 823) states factors that cause LBW can come from maternal factors, and/or fetal factors and/or placental factors. Maternal factors include age, maternal weight before pregnancy, maternal weight gain during pregnancy, poor nutrition, history of parity, chronic diseases, eating disorders, low socioeconomic status, multiple births, race, maternal activity, social depriation and smoking. Fetal factors are sex, genetic and fetal malformations. Placenta factors, placenta or cord abnormalities. genetic factor.

Data from the Central Statistics Agency (CSA)(2016:87) sourced from the DKI Jakarta Provincial Health Office in 2016 stated that the number of LBW in DKI Jakarta Province was 1.812 incidents, with the highest incidence in Central Jakarta, namely 1054 incidents. Because the incidence of LBW in DKI Jakarta Province is still high, this is the basis for the author to conduct a research on: The incidence rate of LBW seen from parity, maternal age during pregnancy and duration of pregnancy.

METHOD

This study is descriptive observational. Data were secondary data of patient medical records at Pasar Minggu Regional General Hospital, East Jakarta. The population in this study were all mothers who gave birth at the Obstetrics Installation at Pasar Minggu Regional General Hospital, East Jakarta in 2017-2018. The sample in the study was all mothers who gave birth to babies with Low Birth Weight (LBW) at the Obstetrics Installation of Pasar Minggu Regional General Hospital in October 2017—October 2018. The sampling technique in this study was total sampling, namely by taking all medical record data that met the inclusion criteria, obtained 196. Inclusion Criteria: All mothers who gave birth to babies with Low Birth Weight (LBW) at Pasar Minggu Regional General Hospitalin 2017—2018; Patients who gave birth to LBW babies with complete medical records. Exclusion Criteria: Patients who do not have complete medical records. The parity of the mother giving birth was divided into 3 groups, namely primipara (giving birth for the first time), multipara (giving birth more than 2 times). The mother's age during pregnancy was divided into 3 groups, namely under 20 years, 20—35 years and over 35 years. While the duration of pregnancy is divided into 3 groups, namely aterm (38—42 weeks), preterm (<38 weeks) and Post term <42 weeks. Data were processed using the Microsoft Office Excel 2016 program.

RESULTS AND DISCUSSION

In this study, the medical record data of mothers who gave birth to LBW amounted to 196 samples. The characteristics of the study subjects included the weight of babies born with LBW, maternal age, parity and gestational age (Table 1).

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Table 1 : Number of LBW based on infant weight, maternal age, parity and gestational age

Characteristics	Number	Percentage
Type of LBW		
LBW 1500—2500 g	157	80,1%
LBW 1499—1000 g	14	7,1%
LWB <1000 g	25	12,8%
Gender		
Male	86	43,9%
Female	110	56,1%
Maternal Age		
<20 years old	21	10,7%
20—35 years old	124	63,3%
>35 years old	51	26%
Parity		
Primipara	100	51,1%
Multipara	92	46,9%
Grande Multipara	4	2,0%
Gestational Age		
Preterm <38 weeks	174	88,8%
Aterm 38—42 weeks	22	11,2%
Post term >42 weeks	0	0

Based on the birth weight group, the results of this study obtained the largest sample in the low birth weight group of 1500—2500 grams, namely 157 people (80.1%) and the lowest in the very low birth weight group of 1499—1000 grams, namely 14 people (7.1%). Based on gender, the results of this study obtained the largest sample of LBW in females, namely 110 people (56.1%), while males were 86 people (43.9%). These results are the same as the results of the study by Zenebe et al. (2014: 74) in Gondar City, Northwest Ethiopia. They stated that results like this are likely caused by androgen hormones stimulating the enlargement of skeletal muscle cells in male babies.

Based on parity groups, this study found that LBW incidents occurred more in the Primipara parity group, namely 100 people (51.1%), multiparas as many as 92 people (46.9%) and grande multipara 2 people (2,0%). HinkleI et al. (2013: 106) and Lin et al. (2021: 257)states in primiparous mothers, the possible cause of the child being born is LBW, because the growth of the uterus is not optimal and the uteroplacental blood flow, which is responsible for delivering oxygen and nutrients to the fetus, is smaller than the uteroplacental blood flow in subsequent pregnancies. In women with advanced age, the risk of obstetrical complications, such as preeclampsia, impaired placental function and decreased oocyte quality, was increased. These complications could subsequently increase the risks of adverse birth outcomes In grandemultipara, the function of the uterus, especially the blood vessels, is disrupted by mothers who have more than five children or high parity. This condition can cause damage to the walls of the uterine blood vessels which disrupts fetal nutrition and causes growth retardation resulting in LBW children

Based on age groups, this study found that the highest incidence of LBW was in the 20—35 year age group, namely 124 people (63.3%) and the lowest in the <20 year age group, namely 21 people (10.7%). Pitriani et al. (2023: 1597) also Sari and Sri Wahyuni

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(2021:131), pregnancy that occurs at an age under 20 years tends not to meet adequate nutritional needs for fetal growth which will have an impact on the baby's birth weight. Teenage mothers who continue to grow during pregnancy can compete with the developing fetus for nutrition, this is supported by several studies that weight gain during pregnancy may be more important for teenage mothers than older mothers. The incidence of prematurity is high in pregnancies over the age of 35 years and under 20 years. Pregnancy at a young age is a risk factor for low birth weight, due to the immaturity of the reproductive organs for pregnancy (the endometrium is not yet perfect). While at the age of over 35 years, the endometrium has decreased fertility, increasing the possibility of disrupted fetal development and growth and the risk of premature birth and children born with abnormalities. [12,13]

Based on gestational age, the results of this study obtained the highest LBW at preterm gestational age or gestational age below 38 weeks, namely 174 people (88.8%), 11.2% at term gestational age, and not found at post-term gestational age or gestational age above 42 weeks. de Bernab et al. (2004: 3) states this might be due to did not reach the optimal time of the fetal to grow. A baby born early has less time in themother's uterus to grow and gain weight, and much of a fetus's weight is increased during the latter part of the mother's pregnancy .[14]

CONCLUSION

In this study, from 196 LBW samples, the most were babies weighing 1500-2500g (80.1%) and female (56.1%). LBW cases were more common in mothers who gave birth between the ages of 20 - 35 years (63.3%), primipara (51.1%) and preterm gestational age (88.8%).

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