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The Effect Of Breastfeeding On Stunting Incidence Among Low Birth Weight Babies

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ABSTRACT

Breast Milk (BM) is the primary source of nutrition for newborns. Breast milk can be provided from birth, starting in the hospital and continuing throughout home care. Exclusive breastfeeding is rare among low birth weight (LBW) babies. This is due to parents' or caregivers' concerns about their baby's weight. Parents prefer to provide supplemental foods in addition to breast milk to accelerate weight gain. Low Birth Weight (LBW) babies who are given formula milk or other foods before 6 months of age are more susceptible to illness, making them more susceptible to illness. Low Birth Weight (LBW) babies can have serious health consequences, including stunting. The purpose of this study was to examine the effect of breastfeeding on stunting in low birth weight babies. A cross-sectional approach was used with purposive sampling. The results and discussion in this study revealed that not all babies were exclusively breastfed; some were supplemented with formula milk. Breast milk and formula milk intake affect the baby's nutrient absorption, thereby influencing their nutritional status. It appears that all LBW babies who do not receive breast milk will experience stunting in their growth and development.

Keywords: *Low Birth Weight, Stunting, Exclusive Breastfeeding*

INTRODUCTION

Low Birth Weight (LBW) is a baby born with a weight of less than 2500 grams, regardless of gestational age. Babies with LBW have a greater risk of experiencing developmental disorders in childhood in the first five years of life, especially if they are not balanced with stimulation. One developmental disorder is a motor disorder.

Low birth weight (LBW) can have serious health consequences, including stunting. According to the 2022 Indonesian Nutritional Status Survey (SSGI), the prevalence of LBW in Indonesia is 6.0%. Furthermore, WHO and UNICEF estimates place the prevalence of prematurity in Indonesia at around 10%. (Nadia Siti, 2023)

The Director of Nutrition and Maternal and Child Health, Dr. Lovely Daisy, stated that preventing premature births and low-birth-weight babies is part of stunting prevention. According to the 2022 SSGI, among the factors contributing to stunting in infants aged 0-11 months are low-birth-weight babies, prematurity, and infectious diseases. (Nadia Siti, 2023)

Breast milk is the primary source of nutrition for newborns. Breast milk can be given from birth, starting in the hospital and continuing throughout home care. We strive to ensure exclusive breastfeeding for six months to achieve optimal growth and development. Breastfeeding support is a global issue. The WHO and UNICEF emphasize the need for optimal support for breastfeeding mothers to ensure they can breastfeed exclusively.

In the case of low birth weight babies, exclusive breastfeeding is very rare. This is due to parents' or caregivers' concerns about the baby's weight. Parents prefer to provide additional foods in addition to breast milk to accelerate weight gain in babies. Low birth weight babies who are given formula milk or food before the age of 6 months can be more susceptible to disease, so the baby will get sick easily. This is based on scientific evidence about the benefits of breast milk for the baby's immune system. Breast milk antibodies are very beneficial for babies. In addition, breast milk is also very beneficial for the development of the child's brain.

METHODS

This study uses a cross-sectional approach to analyze data from respondents and examine the influence of the two variables. This research was conducted in the Sangkrah Surakarta Community Health Center Working Area (Puskesmas), because the most data on LBW is found in the Puskesmas Sangkrah. The data sources in this study consist of secondary data. According to Sugiyono, when viewed from the data source, data collection can use primary and secondary sources. Secondary sources are sources that do not directly provide data to data collectors. Data sources are the subjects from whom the data is obtained. The data sources in this study consist of: secondary data sources from documentation in the Puskesmas Sangkrah Surakarta working area, namely data on babies born with LBW, breastfeeding status and stunting incidence status during growth and development. A research sample is a portion of the total number of subjects studied and is considered representative of the population. The sampling technique used is purposive sampling, with 10 respondents.

RESULTS

This analysis is used to obtain an overview of the frequency distribution or proportion based on the data being studied. The frequency distribution here concerns respondent characteristics. Characteristics are traits or distinctive features inherent in respondents that distinguish one respondent from another. Respondent characteristics in this study consisted of the child's age at the time of measurement and gender.

Table 4.1 Respondent Characteristics

Characteristic	**Amount**	
	N	**%**
Age at the time of measurement		
0-1 year old	5	50%
>1 year old	5	50%
Gender		
Male	7	70%
Female	3	30%

Source: Secondary Data on June 2025

Table 4.1 shows the characteristics of the respondents. At the time of measurement, 5 babies (50%) were aged 0-1 years. 5 babies (50%) were over 1 year old. The majority of babies were 7 males (70%) and 3 females (30%).

Table 4.2 Breastfeeding Status

Breastfeeding Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BM & Infrant Formula	4	40.0	40.0	40.0
	Infrant Formula	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

The table shows that none of the low-birth-weight babies at the Puskesmas Sangkrah were exclusively breastfed, but some respondents were given supplemental formula to support their weight

gain. Four infants (40%) were given both breastfed and supplemental formula to support their weight gain. Six infants (60%) received formula alone without breastfeeding to support their weight gain.

Table 4.3 Stunting Incident Status

Stunting Incident Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
valid	stunting	10	100.0	100.0	100.0

From the table presented, it can be seen that 100% of babies with low birth weight (LBW) aged 0-1 years experienced stunting.

Table 4.4 Data Analysis Results

Correlations			
		Breastfeeding Status	Stunting Incident Status
Breastfeeding Status	Pearson Correlation	1	.[a]
	Sig. (2-tailed)		.
	N	10	10
Stunting Incident Status	Pearson Correlation	.[a]	.[a]
	Sig. (2-tailed)	.	
	N	10	10

a. Cannot be computed because at least one of the variables is constant.

From the table, it can be concluded that there is no significant influence of breastfeeding babies with low birth weight on the incidence of stunting.

DISCUSSION

From the data held by the respondents, all babies with a history of LBW do not receive exclusive breastfeeding, but there is the provision of formula milk as additional nutrition with the aim of allowing the baby to catch up on the weight lag during their life, so that accompanying factors that interfere with the baby's growth and development can be avoided. Providing nutrition to infants not only meets their physiological needs but also affects psychodynamic process, psychosocial development, and organic maturation. When infants' nutritional needs are met, they are expected to grow rapidly according to their age, improve their quality of life, and reduce morbidity and mortality.

One of the effective ways recommended by the World Health Organization (WHO) to meet the nutritional needs of babies with low birth weight is to provide exclusive breastfeeding for at least the first 6 months (Suradi et al., 2010). This aligns with Article 128 of Health Law No. 36 of 2009, which emphasizes the right of infants to receive exclusive breastfeeding unless medically indicated and threatens criminal penalties for those who do not support this. Formula milk is artificial milk or cow's milk whose composition has been altered and sold in packaged form (Djitowiyono, 2010).

Formula milk is not recommended for babies because formula milk is easily contaminated, giving formula milk that is too thin makes babies malnourished, which is too thick will make babies overweight, but if due to certain reasons the baby must get or use formula milk then to prevent the risk must pay attention to the following things: Only formula milk may be given if breastfeeding is not possible, read the formula milk label with clear instructions on how to serve and it must be given with the approval of the head of the local health service (Proverawati & Rahmawati, 2010).

Types of neonatal formula include Adapted formula, which is tailored to the needs of newborns up to 6 months of age. The adapted formula closely mimics breast milk composition and is ideal for newborns up to 4 months of age. At ages under 3-4 months, the digestive tract and kidney function are not yet fully developed, so breast milk substitutes must contain easily digestible nutrients and not contain excess or deficient minerals. Then Complete starter formula that provides a complete nutritional

composition and can be started after birth. This type of formula contains a high protein content, and the ratio of protein fractions are adjusted to match the ratios found in breast milk.

Weight changes in LBW infants reflect the infant's nutritional status and are closely related to their immune system. LBW infants lose 10-15% of their weight in the first week of life, regaining it at 10-14 days of age, at a rate of 25-30 grams per day for 3 months. Meanwhile, LBW infants lose 10-15% of their weight during the first 7-10 days of life, regaining it at 10-14 days of age.

Stunting in low birth weight (LBW) babies is a serious condition that requires treatment. LBW can increase the risk of stunting in children due to impaired growth and development experienced during pregnancy. While not all LBW babies will experience stunting, the risk is higher than for babies with normal birth weight. Risk Factors, LBW is often an indication of nutritional or health problems in the mother during pregnancy, which can lead to impaired fetal and infant growth.

Digestive Disorders, LBW babies may have an under-functioning digestive system, making it difficult to absorb nutrients from food, including breast milk. This can exacerbate the risk of stunting. Growth Delay, LBW babies need to "catch-up growth," or catch up on missed growth. If this process is unsuccessful, or if there are other problems such as repeated infections or poor parenting, the risk of stunting increases.

Long-Term Impacts, Stunting in infancy and childhood can affect long-term physical growth, cognitive development, and overall health. Many factors contribute to stunting in toddlers, and these factors are interconnected. According to the UNICEF Framework, there are three main factors causing stunting: unbalanced dietary intake, low birth weight (LBW), and a history of illness (The & Journal, 2007). Factors contributing to stunting in children aged 24-59 months include low energy intake, a history of short-term infections, low birth weight (LBW), maternal education level, and family income (Setiawan et al., 2018).

Children who suffer from stunting are more susceptible to disease and are at risk of developing degenerative diseases as adults. Stunting can have long-term impacts, including poor health, an increased risk of non-communicable diseases, and poor cognitive and educational achievement during childhood (Bappenas, 2017). This research aligns with research in Tanjung Langkat conducted by Zahriany (2017), which showed a relationship between a history of low birth weight and the incidence of stunting. Low birth weight children are three times more likely to develop stunting than toddlers with normal birth weight.

Low birth weight (LBW) is a public health indicator of malnutrition, encompassing long-term maternal undernutrition, poor health, hard work, and poor pregnancy care. Individually, LBW is an important predictor of newborn health and survival and is associated with high child risk (Ministry of Health of the Republic of Indonesia, 2010). Birth weight is generally closely linked to long-term growth and development. Therefore, the subsequent impact of LBW can include growth faltering. A baby born with LBW will have difficulty catching up on early growth. Lagging behind normal growth can lead to stunting (Oktarina, 2012). This research aligns with the work of Atikah Rahayu et al. (2015) on the history of birth weight and the incidence of stunting in children under two years of age, with multivariate results showing that LBW is one of the most dominant risk factors associated with stunting.

In this study, all infants were not exclusively breastfed but also supplemented with formula. Both breast milk and formula feeding affect the infant's nutrient absorption, thereby influencing their nutritional status. It was observed that all low-birth-weight infants who were not breastfed experienced stunted growth and development.

Exclusive breastfeeding provides the nutritional intake a child needs and supports their growth and development. Infants who do not receive sufficient exclusive breastfeeding are likely to have inadequate nutritional intake, which can lead to malnutrition, one of which can lead to stunting. According to Syafrudin (2009), one of the benefits of exclusive breastfeeding is that it supports infant growth, especially height, because calcium in breast milk is absorbed more efficiently than in breast milk substitutes or formula. Therefore, infants who are exclusively breastfed tend to be taller and more in line with the growth curve than infants who are formula-fed. Breast milk contains more calcium and is well absorbed by the body, thus maximizing growth, especially height, and preventing the risk of stunting. Breast milk also contains lower levels of calcium, phosphorus, sodium, and potassium than formula, while copper, cobalt, and selenium are present in higher levels. The content of breast milk

aligns with the infant's needs, thereby maximizing infant growth, including height. Therefore, it can be ensured that the infant's needs are met, and the infant's nutritional status is normal, both in height and weight, if the infant is exclusively breastfed. (Roesli, 2015).

The results of this study are in line with previous research by Arifin (2012) entitled Analysis of distribution and risk factors for stunting in toddlers in Purwakarta Regency 2012. The results of the study indicate that the most dominant factors in the multivariate analysis is breastfeeding, which affects stunting by 3.1% (OR 95% 1.434-6.835). The results also showed that there were 3 respondents who were given exclusive breastfeeding and had very short height. The results showed that the 3 respondents were born with LBW, where low birth weight will affect the child's subsequent growth, including the child's height.

CONCLUSION

Based on the results of the research and discussion, several conclusions can be drawh: babies with low birth weight do not receive exclusive breastfeeding; on average, mothers choose formula milk to meet their babies' nutritional needs. All babies who experience LBW experience stunting during their growth period in the age range of 0-1 years. There is no significant influence of giving breast milk to LBW on the incidence of stunting.

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