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Research Article

Relationship Between Knowledge and History of Low Birth Weight with the Incidence of Stunting Among Toddlers in Public Health Center

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Abstract

Aims: To determine the relationship between knowledge and historical records of low birth weight (LBW) and the prevalence of stunting in young children at the Cibadak Community Health Center in Lebak Regency.
Method: The study used incidental sampling, involving women with toddlers at the Cibadak Community Health Center, to evaluate their health, using SPSS 22, chi square, and Spearman rank tests.
Results: The results of the research show that knowledge and history of LBW in toddlers have a significant relationship. The p value from the chi square test on the history of LBW with stunting has a value of 0.000, as well as the p value in the Spearman rank test on the mother's knowledge variable regarding the incidence of stunting also has a value of 0.000.
Conclusions: The study focuses on the link between awareness and medical history of low birth weight and stunting in toddlers, emphasizing the necessity of nutritional programs and attention from healthcare providers.

Keywords:
Low Birth Weigh, Posyandu, Public Health, Stunting, Toddlers

INTRODUCTION

Stunting is a health problem, especially a nutritional problem in Indonesia that occurs in toddlers. Stunting is a condition of growth failure and brain development in toddlers caused by long-term malnutrition, so that children have difficulty in achieving optimal cognition. Stunting is characterized by a child's length/height being shorter than children of the same age (1). According to statistics from the World Health Organisation (WHO), Asia has the highest prevalence of stunting globally. Approximately 162 million young children in 2012 were estimated to have stunting. If stunting rates continue to rise without preventative and reduction measures, it is projected that 127 million children will have stunting by 2025. Furthermore, 56% of these stunted children reside in Asia (2). With an average prevalence of 36.4% over the years 2005 and 2017, Indonesia is rated third in Southeast Asia due to the staggeringly high rate of stunting that occurs there. During the year 2018, the frequency of stunting in Indonesia reached 30.8%, according to data from the Basic Health Research (Riskesdas) organization (3). There is still a problem with stunting as a public health issue in Indonesia, as evidenced by the high prevalence of stunting in the country. Despite the fact that the national stunting rate has fallen by 1.6 percent each year from 27.7% in 2019 to 24.4% in 2021, according to the findings of the Indonesian Nutritional Status Study (SSGI) data in 2021, this figure is still much higher than the threshold established by the World Health Organization, which is 20%

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(1). The government has targeted a reduction in stunting rates in Presidential Regulation (Perpres) number 72 of 2021 concerning the acceleration of stunting reduction to reach 14% in 2024-2030 (1). The prevalence of stunting or stunted children due to body failure in Lebak Regency, Banten, until April 2023 decreased to 3,736 people from 4,618 people on December 1, 2022.

Children who experience stunting have a negative impact that lasts for a long time so that it affects their lives (4). Stunting can occur since in the womb, so that the process of stunting occurs together with the inhibition of growth and development of other vital organs, including the brain, kidneys, heart and others. This means that the impact of stunting is not only marked by failure to grow (short), but also failure to develop (cognitive disorders) and metabolic disorders that cause the risk of developing non-communicable diseases (5). There are both direct and indirect variables that contribute to stunting. Direct causes include food intake and infectious diseases, whereas indirect factors include lack of maternal understanding, implementation of incorrect parenting practices for children, maternal education, environment, culture, health services, and food availability (6). One of the risk factors that contributes to the prevalence of stunting is a medical condition known as low birth weight (LBW). LBW refers to a newborn born with a weight of less than 2,500 grams, regardless of the gestational age of the mother. Low birth weight (LBW) babies will have slower growth and development because LBW babies have a slower fetal growth rate from the time they are in the womb (7). LBW babies will also experience digestive tract disorders, because the digestive tract is not yet functioning and as a result their growth and development will be disrupted, if this condition continues with insufficient food provision so that they will often experience infections and poor health care can cause stunting in children (8). In 2019, the cause of the 3 largest neonatal deaths in Indonesia was LBW. One of the risk factors that contributes to the prevalence of stunting is a medical condition known as low birth weight (LBW). LBW refers to a newborn born with a weight of less than 2,500 grams, regardless of the gestational age of the mother. Low birth weight (LBW) babies will have slower growth and development because LBW babies have a slower fetal growth rate from the time they are in the womb (3). Meanwhile, research conducted by Rianda (9) stated that there was a significant relationship between LBW and the incidence of stunting in children aged 24-59 months with a low birth weight category of 59 toddlers (65.6%) with a value of 0.038.

The knowledge of mothers is one of the variables that contributes to the development of malnutrition in children. This is due to the fact that women are the primary caregivers for their children, and mothers are also responsible for deciding what kinds of foods their children and other members of the family will consume (10). According to a preliminary study conducted by experts at the Cibadak Health Center in Lebak Regency, LBW cases were greatest, at 53% in 2022 and 47% in 2021. Although LBW instances increased in 2021 compared to 2022, from 47% to 53%, the incidence of LBW remains relatively high, and is the leading contributor to stunting and low birth weight (LBW) rates in Lebak Regency over the last two years. Based on the foregoing, the author wishes to conduct research entitled "The relationship between knowledge and history of LBW with the incidence of stunting in toddlers at the Cibadak Health Center, Lebak Regency, for the period November 2023".

METHODS

Using the incidental sampling technique, women with toddlers visit the Cibadak Health Center for a check-up based on the sample criteria. Sampling is stopped after the sample size is met (62 samples). Chi square and Spearman rank tests were used in the analysis.

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RESULTS

Univariat Analysis Result

Table 1 Frequency Distribution of Knowledge

Knowledge	Amount	Persentase (%)
Good	41	66,1
Enough	19	30,7
Less	2	3,2
Total	**62**	**100**

Table 1 Based on the research results, those who have good knowledge are 41 respondents (66.1%), while those who have sufficient knowledge are 19 respondents (30.7%), and those who have insufficient knowledge are 2 respondents (3.2%).

Table 2 Frequency Distribution of LBW History in Toddlers

Toddler Birth History	Amount	Persentase (%)
There is	43	69,4
There is not	19	30,7
Total	**62**	**100**

Table 2 Based on the research results, it can be seen that the majority of toddlers who have a history of LBW are 43 respondents (69.4%), while 19 respondents (30.6%) toddlers do not have a history of LBW.

Table 3 Frequency Distribution of Stunting in Toddlers

Stunting	Amount	Persentase (%)
Yes	15	24,2
No	47	75,8
Total	**62**	**100**

Table 3 Based on the research results, it can be seen that the incidence of stunting in toddlers who did not experience stunting was 47 respondents (75.8%), while those who experienced stunting were 15 respondents (24.2%).

Bivariat Analysis Result

Table 4 Relationship between Knowledge and the Incidence of Toddler Stunting

Realtionship	N	r calculate	*P-value*	Decision
Knowledge of stunting incidents	62	0,505	0,000	H0 rejected

Table 4 Based on the results of the Speamean Rank N test analysis output, the number of samples is 62 respondents, while the high correlation is indicated by the number 0.505. The magnitude of the correlation that occurs between the two variables is 0.505. While the p-value number is 0.000 which means <α. This shows that there is a significant relationship between the two variables (p-Value: 0.000).

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From the results of the SPSS analysis as in the table above, a significant value was obtained between maternal knowledge and the incidence of stunting of 0.000 with a spearman correlation of both values <0.05 so that H0 was rejected. It can be concluded that there is a relationship between knowledge and the incidence of stunting in toddlers at the Cibadak Health Center, Lebak Regency, November 2023.

The Relationship Between History of LBW and the Incidence of Toddler Stunting at the Cibadak Health Center, Lebak Regency, November 2023.

Table 5 Cross Tabulation of LBW History in Toddlers stunting incident

History LBW	Stunting				Total		P-Value
	Yes		No				
	n	%	n	%	n	%	
There is	15	24,2%	28	45,2%	43	69,4%	0,000
There is NO	0	0%	19	30,6%	19	30,6%	
Total	**15**	**24,2%**	**47**	**75,8%**	**62**	**100%**	

Table 5 shows that out of 43 respondents (69.4%) who had a history of birth with LBW, 15 respondents (24.2%) experienced stunting and 28 respondents (45.2%) did not experience stunting. Out of 19 respondents (30.6%) who did not have a history of birth with LBW, 0 respondents (0%) did not experience stunting 19 respondents (30.6%) Based on the table above, it can be seen that the chi-square p value is 0.000 where the probability is <0.05 so that Ho is rejected, or it can be concluded that there is a relationship between a history of LBW and the incidence of Stunting in toddlers at the Cibadak Health Center, Lebak Regency for the period November 2023.

DISCUSSION

Univariat Analysis Res

Knowledge

The findings of the study revealed information regarding the level of knowledge regarding the nutrition of toddlers at the Cibadak Health Center. Specifically, 41 respondents (66.1%) possessed a good level of knowledge, while 19 respondents (30.7%) possessed a sufficient level of knowledge, and two respondents (3.2%) possessed an insufficient level of knowledge. The results of the questionnaire in the sufficient category were 46.8% (37 mothers of toddler respondents), while the results in the insufficient category were 45.6% (36 mothers of toddler respondents). This was in contrast to the findings of a previous study that examined the relationship between nutritional parenting patterns and food consumption and the incidence of stunting at the Integrated Health Service Post (Posyandu) in the Randuagung Health Center Work Area, Lumajang Regency in 2014 (11).

History of LBW (Low Birth Weight)

The results of the study showed that data on the history of LBW in toddlers at the Cibadak Health Center mostly had a history of LBW, namely 43 respondents (69.4%), while 19 respondents (30.6%) toddlers did not have a history of LBW. Meanwhile, a previous study discussing the relationship between LBW and exclusive breastfeeding with the incidence of stunting at the Lima Puluh Kota Health Center in Pekanbaru, Riau Province in 2018 had research results that 22 people (29.3%) of babies were born with LBW out of 75 research participants. According to Roshan (12) LBW (Low Birth Weight) babies have slower growth and development than BBLN (Normal Birth Weight). This situation is even worse if LBW babies do not get enough energy and nutrient intake, poor

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parenting patterns and often suffer from infectious diseases. In the end, LBW babies tend to have poor nutritional status, namely stunting. Insufficient nutritional intake can be caused by insufficient food availability at the household level (13). This food availability will be met if the community's purchasing power is sufficient. The socio-economic status of the community is a factor that plays a role in determining the purchasing power of the family (14). As a result of inadequate maternal nutrition and higher infection rates, infants born with low birth weight (LBW) in underdeveloped nations are more likely to undergo intrauterine growth retardation. This is in comparison to the situation in industrialized countries. Babies that are born with a low birth weight will have an effect that will be passed down from one generation to the next. In maturity, children who were born with low birth weight will have fewer anthropometric measurements (15).

Stunting

The findings of the research that was carried out at the Cibadak Health Center on the prevalence of stunting in toddlers revealed that there were 47 respondents who did not experience stunting, which accounts for 75.8% of the total, while there were 15 respondents who encountered stunting, which accounts for 24.2% of the total. Data on the incidence of stunting in toddlers at the Cibadak Health Center reached a total percentage of 15 respondents at the time of the survey, which indicates that 24.2 percent of the overall population was affected by the condition. The study's stunting data revealed an incidence of stunting exceeding 20%, indicating that stunting in this region has escalated into a public health concern, as it surpasses the WHO defined threshold of 20%. According to the World Health Organization (WHO), the prevalence of stunting in toddlers is considered to be a health hazard if the prevalence is at least twenty percent (16). This study is in line with research conducted by Mugianti (17) province where the prevalence of stunting in children aged 12-59 months was 38.4%, while for children aged 0-11 months the prevalence of stunting was 29%. The high prevalence of stunting indicates that growth in children is related to long-term factors, including insufficient food intake due to inappropriate parenting patterns, infections, not breastfeeding for a continuous period, and low household socioeconomic status. Stunting or short children are toddlers who have a height that is lower than the average height for toddlers of the same age. Stunting is also defined as children who are short. One of the characteristics that suggests the development of persistent and long-term nutritional issues is the presence of stunting characteristics (18). Early childhood stunting is associated with reduced levels of IQ, motor skills, and neurosensory integration, according to research into the phenomenon. Stunting in toddlers will consequently have an impact on the quality of life during the school years, during adolescence, and even into adulthood. According to the findings of the SEANUTS study, the incidence of stunting in toddlers aged 6 to 60 months in Indonesia is relatively significant, specifically accounting for 34.1% of the population. According to the findings of Riskesdas 2010, the prevalence of stunting in the United States is higher than ever before, coming in at 35.6% (19)

Bivariat Analysis Result

The Relationship between Knowledge and the Incidence of Toddler Stunting at the Cibadak Health Center, Lebak Regency, November 2023.

During the course of the implementation of Posyandu activities, the findings of the research that was carried out on toddlers at the Cibadak Health Center received information regarding the level of maternal awareness as well as the prevalence of stunting in toddlers. The purpose of this is to investigate the connection between knowledge and the prevalence of stunting in kids under the age of three. A significant value of 0.000 was obtained from the findings of the Spearman rank test analysis

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carried out with SPSS. This value was acquired from the correlation between knowledge and the occurrence of stunting. In other words, the p value is less than 0.05. At the Cibadak Health Center, it is possible to draw the conclusion that there is a connection between the frequency of stunting in toddlers and the level of knowledge that is available. According to Notoatmodjo (20) knowledge is the consequence of knowing, which comes when people perceive specific objects. Sensing occurs through the five human senses: smell, sight, hearing, and touch. Knowledge is the complete understanding that humans have of the world and its contents, including humans and their lives. Knowledge is typically learned through information, including formal schooling and other sources such as radio, television, the internet, newspapers, magazines, and counseling. The level of education influences how a person receives information. People with a higher degree of education will have an easier time receiving knowledge than those with a lesser level of education. This material is provided as a guide for moms to care for their toddlers in everyday situations. Perception can be defined as a person's perspective on something after obtaining knowledge, whether directly or indirectly. (21)

There is a correlation between the amount of nutrients that toddlers consume and being stunted. As a result of the fact that the amount of nutrients that toddlers consume on a daily basis is dependent on their moms, mothers have a significant role in influencing the amount of children who consume nutrients. When it comes to caring for their children, mothers who have a higher level of knowledge are more likely to put their knowledge to use. This is especially true when it comes to providing food that is tailored to the nutrients that toddlers require. This ensures that toddlers do not go without the nutrients they require. According to this research, the number of children who are stunted decreases in proportion to the mother's level of knowledge regarding the issue of stunting. However, even moms who have a good level of understanding have children that are average in their toddler years.

The Relationship Between History of LBW and the Incidence of Toddler Stunting at the Cibadak Health Center, Lebak Regency, November 2023.

From the results of the study, it was obtained from 43 respondents (69.4%) who had a history of being born with LBW, 15 respondents (24.2%) experienced stunting and 28 respondents (45.2%) did not experience stunting, there were 19 respondents (30.6%) who did not have a history of LBW, 0 respondents (0%) did not experience stunting 19 respondents (30.6%). Based on the results of the study, it can be seen that the p value of chi-square is 0.000 where the probability is <0.05 so that Ho is rejected, or it can be concluded that there is a relationship between the history of LBW in toddlers and the incidence of Stunting in toddlers at the Cibadak Health Center. According to the results of research in Banda Aceh City, children born with LBW are at risk of stunting. This is in line with the results of research by Namiiro (22), showed that low birth weight is the most important factor in determining whether or not a child will be stunted. Kids who are born with low birth weight have a higher risk of being stunted compared to kids who are born with normal weight. In addition, it has been established by Lin et al. that low birth weight (LBW) of less than 2,500 grams is a significant risk factor for the following development of children. The research conducted by Abenhaim indicates that a baby is considered to have a low birth weight if the baby's birth weight is less than 2,500 grams, and if the baby's birth weight is four times higher, the infant will die. This is in contrast to a baby's birth weight that falls between 2,500 and 3,000 grams. In general, there is a direct connection between birth weight and mortality rates throughout pregnancy, neonatal and postnatal periods, morbidity rates among infants and children, and long-term growth and development.

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Due to the fact that children who are born with low birth weight will have less anthropometric measurements during their growth, the effects of having babies with low birth weight will be passed down from generation to generation. A single multivariate analysis reveals that the variable of low birth weight has a significant influence on the occurrence of stunting. In Makassar, the findings of a study that was carried out by Mugni and colleagues revealed that the birth weight of newborns between the ages of 12 and 60 months is a major predictor in identifying whether or not they are short. The findings of this study are consistent with the findings of a number of other studies that were conducted in the past and discovered that there was a substantial connection between the history of low birth weight and the status of stunting in toddlers. According to Arifin et al., children with low birth weight who are also accompanied by poor food consumption, inadequate health care, and frequent illnesses during growth would continue to result in stunted growth and result in children who are stunted.

CONCLUSIONS

The results of the study conducted on mothers and toddlers at the Cibadak Health Center, Lebak Regency with the title "The Relationship between Knowledge and History of LBW with the Incidence of Stunting in Toddlers at the Cibadak Health Center, Lebak Regency, November 2023" can be concluded as follows: Most moms of toddlers at the Cibadak Health Center in Lebak Regency have adequate knowledge, with 41 respondents (66.1%). In Posyandu activities at the Cibadak Health Center in Lebak Regency, 43 toddlers (69.4%) have a history of LBW (Low Birth Weight), whereas 19 (30.6%) have normal birth weight. There is a substantial association between knowledge at the Cibadak Health Center in Lebak Regency and the occurrence of stunting in toddlers, as indicated by the test findings (p value = 0.000). There is a strong link between knowledge and history of LBW at the Cibadak Health Center in Lebak Regency and the prevalence of stunting in toddlers. There is a substantial association between the history of LBW at the Cibadak Health Center in Lebak Regency and the incidence of stunting in toddlers, as indicated by the test findings (p value = 0.000).

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