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Birth Weight and Length of Stunting Toddlers in Working Area of *Seteluk* Public Health Center in West Sumbawa in 2019: A Case Study

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Abstract

Background: Stunting is a chronic condition that describes stunted growth due to long-term malnutrition. Stunting in toddlers needs special attention because it can hamper children's physical and mental health. Low birth weight and length indicate that the child during the womb experienced a lack of nutritional intake, so the impact on growth was not optimal. **Objective:** To determine the birth weight and length of stunting toddlers in the working area of *Seteluk* Public Health Center in West Sumbawa in 2019. **Methods:** This study used a descriptive research method with a cross-sectional time study conducted in July 2019 in the work area *Seteluk* Public Health Center, West Sumbawa, West Nusa Tenggara, with a total sample of 97 children under five based on inclusion and exclusion criteria. **Results:** The birth weight of stunted toddlers showed that of the 97 stunting toddlers, 9 toddlers (9.3%) had abnormal birth weights and 88 toddlers (90.7%) had normal birth weights. Meanwhile, birth length showed that 28 toddlers (28.9%) had abnormal birth lengths, and 69 (71.1%) had normal birth lengths. **Conclusion:** Birth weight and length are not a risk of stunting, but if a toddler is accompanied by poor nutritional intake and has an infectious disease, the toddler will experience stunting. **Recommendation**: We hope that all midwifery can provide systematic education routinely on the importance of nutrition in babies to improve the understanding of society and prevent stunting in childhood.

Keywords: weight, length, toddler, stunting.

INTRODUCTION

Stunting is a chronic condition that describes stunted growth due to long-term malnutrition. Stunting, according to WHO Child Growth Standards, is felt on the index of body length compared to age (PB/U) or height (TB/U) with a limit (z-score) of less than -2 SD. Stunting in toddlers needs special attention because it can hamper children's physical and mental health. Stunting is associated with an increased risk of illness and death and stunted growth of chronic and mental abilities (1).

The World Health Assembly (WHA) in 2012 revealed that more than 165 million (25%) children aged five years were stunted, and 90% were in developing countries. Demographically, according to the United Nations Children's Fund (UNICEF), in 2012, the incidence of stunting was highest in rural areas (40%) compared to urban areas (33%). The World Health Organization (WHO) shows that the global stunting problem is 20%, which makes almost all countries in the world experience public health problems in the form of stunting (WHO, 2010) (2).

Basic health research (2018) noted that the national stunting prevalence reached 30.8%, increasing in 2013 (37.2%) and 2007 (36.8%). Approximately 8 million Indonesian children suffer from suboptimal growth or one in three Indonesian children. The prevalence of stunting in Indonesia is higher than in other countries in Southeast Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%). Growth is not optimally suffered by about 8 million Indonesian children or one in three. Indonesia is ranked fifth for the number of stunted children. More than a third of children under five in Indonesia are below average height (3).

Indonesia is included in the top five most stunting events in children under five, totaling 7.8 million.(2) Basic health research data in 2001 recorded the prevalence of stunting in Indonesia from 29.5% to 28.5% in 2004, increased in 2007 by 36.8%, and 35.6%, 2010 to 37 2% in 2013 (4). Indonesia ranks first in the prevalence of stunting from the south-East Asia Regions, namely 36.4% based on child malnutrition Estimates data in 2013, which is far above the Philippines' 30.3% (5).

The results of the research by Swathma, Lestari, and Firm (2016) show that birth weight and length with stunting incidence in toddlers at the Kansai Health Center, Kediri City, Toddlers born with low birth weight and length with stunting incidence of 78.1%. Low birth weight and length indicate that the child during the womb experienced a lack of nutritional intake, so the impact on growth was not optimal (6). Another study conducted by Risky Trikomalasari in 2018 at the Padang Air Cold Health Center stated that stunting toddlers who had low birth weight and length were 26.3% (7).

Data from the NTB Health Office showed stunting rates in 2016 were 29.6% stunting cases, In 2017, there was an increase in stunting rates reaching 150 thousand children or around 37.2% stunting cases, In 2018, there was a decline in stunting cases by 33% and In 2019, there was also a decline in stunting cases by 28%. With this, many issues, including the wrong category. Of the 10 districts/cities in NTB, the most stunting cases were found in the Sumbawa district, reaching 41.8% and then followed by Central Lombok districts at 39.1%, Dompu at 38.3%, North Lombok at 37.6%, Mataram with 37.5%, Bima with 36.7%, West Lombok with 36.1%, East Lombok with 35.1% and West Sumbawa 32.6%. Based on data from the West Sumbawa District Health Office, stunting in 2019 was the highest in Poto Tano Health Center at 29.30% cases, followed by Seteluk Health Center with 18.32% cases, Brangene Health Center at 13.45% cases, Tongo Health Center 12.75% cases, Maluk Health Center 12.59% cases, Sekongkang Health Center 8.10% cases, Brang Rea Health Center 5.91% cases, Taliwang 6.30% cases, and Jereweh 3.88% cases (8).

Data from researchers at the Seteluk Health Center shows that the number of stunting in 2017-2019 has decreased. In 2017 the number of stunting cases was 150, and in 2018 it decreased by 95. However, in 2019 the number of stunting experienced a slight increase of 98 cases (9).

Based on this description, the researcher is interested in researching "birth weight and length of stunting toddlers in the working area of Seteluk Public Health Center in West Sumbawa in 2019".

OBJECTIVE

The study aimed to determine the birth weight and length of stunting toddlers in the working area of *Seteluk* Public Health Center in West Sumbawa in 2019.

METHODS

Design

This study used a descriptive research method, which was carried out with the main aim of making an overview of a situation in general. The objective used to solve or answer the problems faced in the current case in terms of time this research is cross-sectional in which the research subjects are observed at the same time (10). This study analyzes data only at the level of description, where researchers take a nursing care approach that includes assessment, diagnosis determination, interventions, and implementation to evaluation (11,12).

Sample and sampling technique

The population in this study were all children under five who experienced stunting in the Work Area of the Seteluk Public Health Center in West Sumbawa, West Nusa Tenggara in 2019 with a sample of 97 toddlers who met the inclusion and exclusion criteria. The focus of the study discussed by the researcher is toddlers who experience stunting, which can be influenced by weight and birth length.

Instruments

Secondary data was obtained from the Seteluk Public Health Center in West Sumbawa, which supports research such as medical records for mothers under five, registers for mothers under five, MCH books, and descriptions of public health center profiles. In addition, to determine the birth weight and length of stunting toddlers based on the following characteristic criteria: normal weight ≥2500 gr and abnormal <2500gr, during normal birth length ≥48cm and abnormal <48cm.

Secondary data were obtained based on the results of collecting data from register numbers and medical records of mothers under five, then observed by looking at the MCH book owned by mothers of children under five who underwent routine checks at the Seteluk Public Health Center in West Sumbawa. The MCH handbook (Maternal and Child Health) was a guide for information and health records during pregnancy, childbirth, and children aged 6 years. The book's contents are very important for monitoring health and noting any abnormalities in the mother and child. Furthermore, the researchers examined the birth weight and length of children under five who experienced stunting.

Data Analysis

Was carried out by calculating the percentage distribution of each variable manually. The statistics describe or provide an overview of the object under study through sample or population data. The presentation of data in this descriptive statistic uses data collection methods with distribution tables to determine the birth weight and length of stunting toddlers at the Seteluk Public Health Center, West Sumbawa (13).

Ethical considerations

In conducting research, it is necessary to obtain recommendations from the institution or other parties by applying for permission from the institution or institution where the research is conducted. When conducting research, researchers need to consider several ethical considerations, including anonymity, confidentiality, autonomy, justice, and beneficence. The researcher asked for the respondent's consent to participate (informed consent) before the research was conducted, with the serial number of the respondent registered from 1 to 97.

RESULTS

Table 1. Description of sample frequency identification based on birth weight of stunting toddlers

From the results of research conducted in the work area of the Seteluk Public Health Center in West Sumbawa, the birth weight of stunting toddlers is grouped into 2 categories: normal and abnormal. For more details, it can be seen in table 1 below:

Birth Weight	Frequency (N=97)	Percentage (%)
Normal	88	90.7
Abnormal	9	9.3

Total	**97**	**100**

Table 1 shows that of the 97 samples experiencing stunting, 88 toddlers (90.7%) had normal birth weights, while the other 9 toddlers (9.3%) had abnormal birth weights.

Table 2. Description of sample frequency identification based on birth length of stunting toddlers

From the results of research conducted in the work area of the Seteluk Public Health Center in West Sumbawa, the birth length of stunting toddlers is grouped into 2 categories, namely: normal and abnormal. For more details, it can be seen in table 2 below:

Birth Length	Frequency (N=97)	Percentage (%)
Normal	69	71.1
Abnormal	28	28.9
Total	**97**	**100**

Table 2 shows that of the 97 samples experiencing stunting, 69 toddlers (71.1%) had normal birth lengths, while 28 other toddlers (28.9%) had abnormal birth lengths.

DISCUSSION

In this discussion section, we will review the results of research that have been carried out, namely birth weight and length with stunting in the work area of the Seteluk Public Health Center, Seteluk sub-district, West Sumbawa Regency in 2019:

Birth weight in stunting toddlers in the work area of the Seteluk Public Health Center in West Sumbawa in 2019

From the results of research conducted at the Seteluk Public Health Center, it can be seen that 97 toddlers, 88 toddlers (90.7%), have normal birth weight, while 9 toddlers (9.3%) have abnormal birth weight.

The results of this study indicate that toddlers with normal birth weights are more likely to experience stunting. This shows that toddlers with an LBW history are not necessarily stunted. Toddlers with normal birth weights also have the potential to experience stunting due to the inadequate nutritional intake obtained by these toddlers. This is in line with research conducted by Rahmadi in 2015, which stated that birth weight is not a risk of stunting; a lack of nutritional intake usually causes stunting during the toddler's growth period. Meanwhile, research conducted by Meilyasari (2014) in Kendal also stated that abnormal birth weight was not a risk of stunting in toddlers (14).

However, babies with low birth weight can also experience digestive tract disorders because the digestive tract is not yet functioning, such as being unable to absorb fat and digest protein, resulting in a lack of nutrient reserves in the body. As a result, the growth of LBW babies will be disrupted. If this situation continues with inadequate feeding, frequent infections, and poor health care, it can cause children to experience stunting (15). The results of this study are in line with research in Vietnam that a history of low birth weight is the main risk factor for stunting in children under three years of age (OR=4.4; 95% CI: 2.08-9.10) (16). Children with a history of low birth weight (LBW) are one factor that can affect a child's growth (17).

Stunting is not caused by a single factor but is caused by many factors that are related to each other. The three main factors that cause stunting are unbalanced nutritional intake, a history of infectious diseases, and low birth weight. Lack of nutritional information for a long time due to parents/families who do not know or are not aware to provide food that is by their children's dietary needs. (2) Based on several studies from the literature review, the prevention of stunting can be done by using educational methods that are assisted by using various effective educational media and providing continuous information to pregnant women (18).

Birth length of stunting toddlers in the work area of the Seteluk Public Health Center in West Sumbawa in 2019

From the results of this study, it can be assumed that birth length is not a risk of stunting because of the 97 toddlers who experienced stunting, 69 toddlers (71.1 %) with standard body length, and 28 toddlers (28.9%) with abnormal birth length.

The results of research conducted by toddlers who experienced stunting the most occurred in toddlers with normal birth lengths. From the results of this study, it can be seen that toddlers with a standard birth length still risk experiencing stunting. This is in line with

the 2016 shwatma research, which states that if the toddler has a normal birth length but is now experiencing stunting, it can be due to insufficient nutrient intake, which causes failure to thrive (6).

Stunting is a toddler problem that currently occurs in various regions. The occurrence of stunting in toddlers is often not realized, and after two years, the toddler looks short. Chronic nutritional problems in toddlers are caused by inadequate dietary intake for a long time due to parents or families not knowing or not being aware of providing food that is to the nutritional needs of children. The causative factors of several studies include LBW problems, nutrition, infection, and others. [19] Stunting must be prevented because it will impact future physical and cognitive development (20).

During the child's growth period, many other things influence besides birth weight, one of which is the problem of child nutrition, the child's health condition at the beginning of life. This condition is in line with several studies conducted on birth weight in which the results of this study did not show a relationship with the incidence of stunting in children under five, which can be caused by many factors that have a more significant influence on the incidence of stunting in children under five, such as nutritional deficiencies and infections. In addition, the effect of birth weight on height growth is most significant at the age of the first 6 months. If in the first 6 months, a toddler can improve his nutritional status, then there is a possibility that the toddler's height can grow normally and avoid stunting at a later age (21-22).

Birth height, or toddler body length, has a normal value of 50 cm. Several studies state that birth length is related to the incidence of birth length. Children with low birth length have a 6.29 times greater risk of becoming stunted than toddlers with standard birth length. This study showed no relationship between the length of the toddler's body and the incidence of stunting. This can be caused by other factors, such as the nutritional input of children during parenting so that even though the child's body length is short if the child's nutrition is well fulfilled, stunting does not occur (23).

CONCLUSION

Based on the results of the discussion on the study of birth weight and length with stunting in the work area of the Seteluk Public Health Center in West Sumbawa, West Nusa Tenggara, it can be concluded that birth weight and length are not a risk of stunting, but if toddlers are accompanied by adequate nutritional intake. If the child is not good and has an infectious disease, the toddler will experience stunting.

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