

## **Correlation Of Birth Weight With Stunting In Babies Aged 6-24 Months**

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### **ABSTRACT**

**Background:** Stunting is one indicator of chronic nutritional status that describes stunted growth due to long-term malnutrition. One of the causes of stunting in children is family and household factors, namely maternal factors and the home environment. **Objective:** The purpose of this study was to determine the relationship between birth weight and the incidence of stunting in infants aged 6-24 months **Method:** This research was conducted in an analytical descriptive manner, namely research that tried to explore how the health phenomenon occurred. The population in this study was a number of infants aged 6-24 months, namely 48 infants. Considering that at the time of the study, there were 15 infants who were unreachable and, not in place at the time of the study, while the researcher's time was very limited, so in this study the researcher used a sample of 33 6-24 month old baby. **Result:** from the analysis test results with Fisher's exact test, a significance value of 0.023 and an odds ratio of 18.75 was obtained. **Conclusion:** The conclusion of this study is that from 33 infants aged 6-24 months, there are 7 babies who are LBW and 4 babies who are stunted. There is no relationship between birth weight and the incidence of stunting in infants aged 6-24 months where LBW babies are 18 times more likely to experience stunting than babies born with normal birth weight.

**Keywords:** Stunting, nutrition, LBW, children

## Introduction

Stunting is a form of linear growth disorder that occurs mainly in children. Stunting is one indicator of chronic nutritional status that describes stunted growth due to long-term malnutrition (Nasution et al., 2014). The problem of short children (stunting) is one of the nutritional problems faced in the world, especially in poor and developing countries (Atikah Rahayu, Fahrul Yulidasari, Andini Octaviana Putri, 2015).

Stunting is a problem because it is associated with an increased risk of morbidity and mortality, suboptimal brain development so that motor development is delayed and mental growth is stunted (Fitri, 2018);(Himawati & Fitria, 2020);(Sutrio & Lupiana, 2019). Nutritional problems arise because of consuming foods that are only considered delicious and filling. While balanced nutrition must be met from a variety of foods consumed, because there is no food that has perfect nutritional content, so it is necessary to diversify the food consumed. (Setiawan et al., 2018).

The global incidence of stunting is estimated at around 171 million to 314 million, which occurs in children under 5 years of age and 90% of them are in countries on the African and Asian continents. (Rahmadi, 2016). Riskesdas 2018 data for short and very short toddlers was 37.2% while in 2019 it decreased to 30.8%. Although these short and very short toddlers have decreased, the 30.8% figure is still very high (Riskesdas, 2019).

Children under five aged 0-59 months experiencing stunting in West Sulawesi Province reached 37 percent or higher than the national stunting rate of 27.5 percent. Babies with low birth weight (LBW) can cause 8 times greater perinatal mortality than normal babies (Winowatan et al., 2017). Based on the results of a preliminary study conducted by researchers at the Sesenapadang Health Center, the number of stunting recorded in 2019 was 3032 stunting toddlers recorded from 17 Puskesmas in Mamasa Regency. One of them is the Sesenapadang Health Center in 2019 the number recorded based on visits per month that checks the development of baby growth and development as many as 214 and suffering from stunting is 98. From the results of a preliminary study conducted in the working area of Mamasa Health Center 10 mothers who have stunting babies get information that 4 children have low birth weight (LBW).

## Objective

The purpose of this study was to determine the relationship between birth weight and the incidence of stunting in infants aged 6-24 months in Rantepuang Village, Sesenapadang District, Mamasa Regency.

## Method

This research was conducted in an analytical descriptive manner, namely research that tries to explore how the health phenomenon occurs using a cross sectional approach by finding out the correlation between risk factors and effects by approaching, observing or collecting data all at once (point time approach). The population in this study was a number of infants aged 6-24 months in the Sespa Health Center, namely 48 infants who entered the research inclusion criteria. Considering that at the time of the study, there were 15 infants who were unreachable and, not in the place at the time of the study while the researcher's time was very

limited, so in this study the researchers used a sample of 33 infants aged 6-24 months. The analysis used in this study was chi square with a level of 0.05 significance.

## Results

Distribution of respondents based on birth weight and incidence of stunting :

Tabel 1. Respondent Characteristics

Variabel	N	%
<b>Baby Gender</b>		
Man	13	39.90
Women	20	60.10
<b>Birth story</b>		
Normal	28	78.80
Ceasar	5	21.20
<b>Birth weight</b>		
<2500 grams (LBW)	7	21.20
>2500 grams (BBLN)	26	78.80
<b>Stunting incident</b>		
Stunting	4	12.1
Normal	29	87.9
<b>P value</b>	<b>0.023*</b>	
<b>OR</b>	<b>18.75*</b>	
<b>Quantity</b>	<b>33</b>	<b>100.0</b>

\*Uji chi square, \*\* nilai odds ratio

Based on Table 1, it shows that of the 33 respondents, the majority of female infants were 20 toddlers (60.10%), and a small proportion were male infants as many as 13 toddlers (39.90%). Meanwhile, there were 28 (78.80%) babies with normal birth history, and 5 (21.20%) history of cesarean birth. Respondents with birth weight < 2500 grams (LBW) were 7 babies (21.2%) while respondents with normal birth weight (BBLN) > 2500 grams were 26 babies (78.8%). While the incidence of stunting in respondents was 4 babies (12.1%), and normal (not stunting) were 9 babies (87.9%). And to find out the relationship between LBW and stunting, the results of the chi square analysis test with the statistical test P value obtained a value of 0.023 which is lower than the alpha value of 0.05, meaning  $H_a$  is accepted and  $H_0$  is rejected, meaning there is no relationship between birth weight and birth weight. stunting incident. While the odds ratio of 18.75 illustrates that babies with low birth weights are 18 times more likely to be stunted than babies born with normal birth weights.

## Discussion

Based on the results of a study conducted on 33 infants in the working area of the Sesenapadang Health Center, it was found that respondents with birth weight < 2500 grams (LBW) were 7 babies (21.2%) while respondents with normal birth weight (BBLN) > 2500 grams

were 26 babies (78.8%). These results are in accordance with research conducted by Atikah Rahayu, Fahrul Yulidasari, Andini Octaviana Putri, (2015) found that LBW had a significant relationship to the incidence of stunting. Research conducted by Surajudin in 2011 in Putra 2015 stated that short children are 3 times greater than non-LBW, growth is impaired, causes of wasting, and the risk of malnutrition (Sutrio & Lupiana, 2019).

Low birth weight is a picture of public health malnutrition including long-term malnutrition, poor health, hard work and poor health care and pregnancy. Individually, LBW is an important predictor of the health and survival of newborns and is associated with high risk in children (Kemenkes RI, 2010). Birth weight in general is closely related to long-term growth and development. Thus, the continued impact of LBW can be in the form of failure to thrive (growth faltering). A baby born with LBW will find it difficult to catch up with early growth lags. Growth that lags behind normal will cause the child to become stunted (Winowatan et al., 2017) This research is in line with research (Rahayu et al., 2015)

Regarding the history of birth weight with the incidence of stunting in children under two years of age with multivariate results, it was found that LBW is one of the most dominant risk factors associated with stunting. Low birth weight is a picture of multiple public health problems including long-term malnutrition, poor health, hard work and poor health care and pregnancy. From the results of the study, it was found that from 33 infants there were 4 infants (12.1%) stunting in respondents, and 9 infants (87.9%). The results of this study are in line with (Nasution et al., 2014) which shows that the risk of stunting is higher for toddlers with low birth length (<48 cm). The risk for growth faltering is greater in infants who have experienced previous Fallers, namely conditions during pregnancy and prematurity. The length of the baby's birth will have an impact on further growth, the results show that low birth length is one of the risk factors for stunting toddlers aged 12-36 months that babies born Babies with low birth length have a 2.8 times risk of experiencing stunting compared to babies with normal birth length. Stunting children experience slow and short skeletal growth. This condition is caused by not meeting food needs and increasing pain for a long time. The prevalence of stunting and underweight children mostly occurs in the 2nd and 3rd years of life. The effect of genetic and ethnic differences is taken into consideration when evaluating height for age (Hizni et al., 2010).

Stunting (short) or chronic malnutrition is another form of growth failure. Chronic malnutrition is a condition that has occurred for a long time, not like acute malnutrition. Children who experience stunting are often seen as having a normal, proportional body, but in fact their height is shorter than the normal height of children their age. Stunting is a cumulative process and is caused by inadequate intake of nutrients or recurrent infectious diseases, or both. Stunting can also occur before birth and is caused by very poor nutritional intake during pregnancy, poor food parenting, the low quality of food is in line with the frequency of infection so that it can inhibit growth (Sutio, 2017).

From the results of this study, there were 7 babies who experienced LBW where 3 babies were stunted and 4 babies grew normally and there was 1 baby who was not LBW but

was stunted. The results of the statistical test obtained a value of 0.023 which is lower than the alpha value of 0.05, meaning  $H_a$  is accepted and  $H_0$  is rejected, meaning there is no relationship between birth weight and stunting. While the odds ratio of 18.75 illustrates that babies with low birth weights are 18 times more likely to be stunted than babies born with normal birth weights. Research conducted by Winowatan et al., (2017) in Minahasa district is in line with this study, showing that LBW is not statistically related to the incidence of stunting in children under five. And the results of the study showed the value of  $p = 0.411$  ( $p > 0.05$ ).

This research is also in accordance with previous research conducted by (Zamrodah, 2016) on the Factors Affecting the Incidence of Stunting in Toddlers in Rural and Urban Areas, where the results of the analysis show that there is no relationship between LBW status and the incidence of stunting in children both in rural and urban areas. Likewise, the results of research by (Lusita et al., 2017)Wiyogowati (2012) stated the same thing that LBW was not associated with stunting in West Papua. According to the researcher's assumption, this is because in general babies with low birth weight find it difficult to pursue optimal growth during the first two years of life. Growth failure that causes stunting generally occurs in a short period (before birth to approximately 2 years of age), but has serious consequences later in life. Low birth weight is a reflection of many public health problems including long-term malnutrition, poor health, hard work and poor health care and pregnancy. Individually, LBW is an important predictor of the health and survival of newborns and is associated with a high risk for the child.

## Conclusion

The conclusion of this study is that from 33 infants aged 6-24 months, there are 7 babies who are LBW and 4 babies who are stunted. There is no relationship between birth weight and the incidence of stunting in infants aged 6-24 months where LBW babies are 18 times more likely to experience stunting than babies born with normal birth weight.

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