

## Conference Paper

# Identification of Stunting Determinants in Toddlers in Prevention of Nutritional Problems in the North Buton Regency

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Stunting is failure to grow in children less than five years old due to chronic malnutrition so that the child is slow and short. The determinants of stunting in toddlers include low birth weight (LBW), exclusive breastfeeding and complete basic immunization. This research is a qualitative descriptive study. The data used in this study is secondary data on stunting obtained from the Southeast Sulawesi Provincial Health Office and the North Buton District Health Office. The population and samples in this study were data on stunting prevalence, exclusive breastfeeding, LBW and complete basic immunization obtained from the Health Office of the North Buton Regency in the period of 2016 to 2020. The result showed that stunting prevalence in the North Buton Regency in a period of 5 (five) years are volatile with the highest prevalence occurring in 2017 at 44.5% and the lowest occurring in 2018 at 27.2%. The prevalence of stunting and the percentage of exclusive breastfeeding for the last 5 years are directly proportional and the percentage of complete basic immunization for the last 5 years is very high, even exceeding the set target. Compared descriptively, this high percentage is not proportional to the prevalence of stunting in the North Buton Regency.

**Keywords:** Stunting, Determinant, Infant

## 1. INTRODUCTION

Stunting is a condition of failure to thrive in children under five years old (infants under five years old) due to chronic malnutrition so that the child is too short on his age[1]. Stunting is one of the nutritional problems happens to toddlers in the world. There are about 1 (one) out of 4 (four) toddlers is stunted[2]. WHO has launched Global Nutrition Targets published at the World Health Assembly, one of which is to reduce the incidence of stunting by 40% by 2025[3].

Indonesia is the fifth ranks with the highest prevalence of stunting in the world [2]. The Basic Health Research Report shows stunting less than five years old in Indonesia reaches 30.8% [4]. The stunting prevalence data under five children is decreased from 37.2% in 2013 to 30.8% in 2018[4]. Several studies have found that the impact

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of stunting can be divided into short-term and long-term impacts. Short-Term Impact, namely an increase in the incidence of morbidity and mortality; Cognitive, motor, and verbal development in children is not optimal; and Increased health costs. Long-Term Impact, namely body posture that is not optimal as an adult (shorter than in general); Increased risk of obesity and other diseases; Declining reproductive health; Less than optimal learning capacity and performance during school years; and Productivity and work capacity are not optimal [5].

The determinants of stunting in toddlers include Low Birth Weight (LBW)[1],[6],[7], Exclusive Breastfeeding[1],[8],[7] and complete basic immunizations[9]. According to Riskesdas of the year 2018, the proportion of LBW (<2500 grams/LBW) has increased from 5.7% in 2013 to 6.2% in 2018[4]. The percentage of complete basic immunization decreased from 59.2% in 2013 to 57.9% in 2018 while the percentage of exclusive breastfeeding in 2020 was 66.1%. Based on the Nutrition Status Monitoring (PSG) data for Southeast Sulawesi in 2020, there were 21.7% stunting under five [10]. Based on data from the North Buton Health Office in 2020, the prevalence of stunting is 35.8%. The prevalence of stunting becomes a health problem if the prevalence reaches 20% [11]. This study objective is to look at the picture and compare it with the percentage of supporting programs in reducing stunting prevalence in North Buton Regency

## 2. RESEARCH METHODS

Descriptive qualitative or non-reactive research is used on this research. The data used in this study is secondary data on stunting obtained from the Southeast Sulawesi Provincial Health Office and the North Buton District Health Office. The population and sample in this study were data on the stunting cases in toddlers in the form of stunting prevalence rates and determinants of stunting in toddlers, namely exclusive breastfeeding, LBW and complete basic immunizations obtained from the Health Office of North Buton Regency from 2016 to 2020. The data that has been collected and then analyzed *univariat* with Microsoft Excel program to describe the prevalence of stunting and the percentage of supporting programs to reduce stunting prevalence in North Buton Regency.

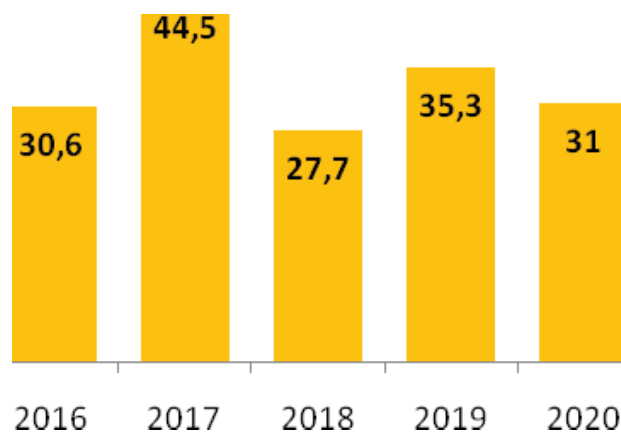
## 3. RESULT of the study

In this study, the data collected was then analyzed using univariat to see the prevalence of stunting for the last 5 (five) years by comparing the achievements of supporting

programs in reducing stunting prevalence, namely the percentage of mothers who gave exclusive breastfeeding, low birth weight (LBW) and complete basic immunization in North Buton Regency for the period 2016 to 2020 which can be seen in graphs 1-4 as follows:

### 3.1. Stunting Prevalence Rate Analysis

The prevalence rate in the epidemiological study of a disease shows the proportion of the population that has certain characteristics in a certain period of time. In this study, the proportion unit used is the percentage (%) with the observed character or problem being stunting for the last 5 (five) years. The description of the prevalence of stunting in the period 2016 to 2020 in North Buton Regency can be seen on the graph 1 below:



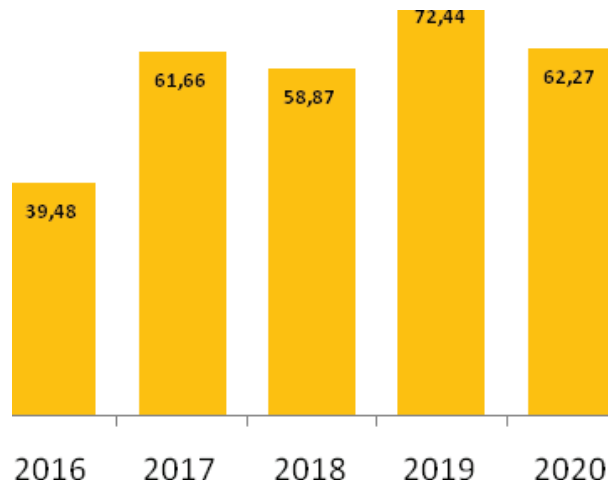
**Figure 1:** Stunting Prevalence in North Buton Regency from 2016 to 2020.

Based on Figure 1, it can be seen that the prevalence of stunting in North Buton Regency from 2016 to 2020 is fluctuating. The prevalence of stunting is become a health problem if it reaches 20% [11]. Figure 1 also shows that the highest prevalence of stunting occurred in 2017 at 44.5% and the lowest occurred in 2017 at 27.7%.

### 3.2. Exclusive breastfeeding

Exclusive breastfeeding is not giving the baby any other food or drink including water other than breastfeeding except for medicines and vitamin or mineral drops. In Riskesdas 2010, exclusive breastfeeding is a composite of the questions that the baby is still breastfed, since birth has never have food or drink other than breast milk, during the last 24 hours the baby has only been breastfed (not given food other than breast milk)[12]. In this study, data observations were carried out for the last 5 years on the percentage

of exclusive breastfeeding. The percentage of exclusive breastfeeding can be seen in Figure 2 as follows:

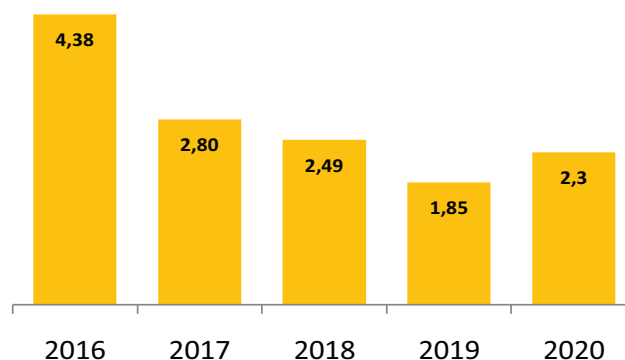


**Figure 2:** Exclusive breastfeeding percentage of in year 2016 to 2020.

Based on Figure 2, the percentage of exclusive breastfeeding in North Buton Regency is still fluctuating. The highest percentage of exclusive breastfeeding occurred in 2019 at 72.44 and the lowest in 2016 at 39.48%. However, for the last five years the percentage of exclusive breastfeeding in North Buton Regency has not reached the national target of 80%.

### 3.3. Low birth weight

Low birth weight (LBW) babies are babies with a birth weight of less than 2500 grams regardless of gestational age [13]. The percentage of LBW in North Buton Regency for the last five years can be seen in Figure 3 as follows:

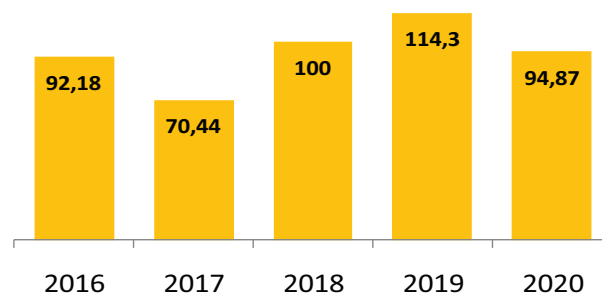


**Figure 3:** Percentage of Low Birth Weight (LBW) in the year 2016 - 2020.

According to the Figure 3 above, the percentage of babies with low birth weight tends to decrease although in 2020 there will be a slight increase again. In 2016 the highest percentage for the last 5 years was 4.38% and the lowest occurred in 2018 which was 1.85%.

### 3.4. Complete Basic Immunization

Immunization is an effort to cause and increase immunity to disease in infants which is carried out by injection. Immunizations should be given to infants and children of primary school age/equivalent. There will be a risk of outbreaks such as measles if the baby is not immunized [13]. The percentage of complete basic immunization achievements from 2016 to 2020 can be seen in Figure 4 as follows:



**Figure 4:** Percentage of Complete Basic Immunization Achievements 2016 to 2020.

Based on Figure 4, the percentage of complete basic immunization in the last five years is fluctuating. The lowest achievement occurred in 2017 which was 70.44%. In the year 2019 the percentage of complete basic immunization passed 100%, which means that the achievement is higher than the target that has been set.

## 4. DISCUSSION

Stunting is the result of a TB/U assessment that reflects past nutritional status, in this case the age of 24-59 months. In the age range, mothers play an important role in child care patterns, starting from breastfeeding for 6 months, providing quality materials for MP Breastfeeding, complete basic immunizations, to monitoring the growth and development of toddlers although the habit and quality of care are also influenced by many factors. It includes the level of education of the mother. Another study explained that basic education was 1.28 times causing babies to be stunted [13].

## 4.1. Stunting and Exclusive Breastfeeding

The prevalence of stunting and the percentage of exclusive breastfeeding in North Buton Regency for the last 5 years are directly proportional. If viewed descriptively, the achievement of exclusive breastfeeding which has not reached the national target for the last five years may be the cause of the high prevalence of stunting in North Buton Regency for the last 5 years. Several studies have found that there is a relationship between exclusive breastfeeding and the cases of stunting [7]. Another study also found that one of the factors that caused stunting for infants was not getting exclusive breastfeeding [6,21].

The low level of breastfeeding is a threat to the growth and development of children which will affect the growth and development of the quality of human resources in general. Good breastfeeding by mothers will help maintain a child's nutritional balance so that normal child growth is achieved. Breast milk is needed in the baby's growth period so that his nutritional needs are fulfilled. Therefore, mothers must and are obliged to exclusively breastfeed their babies until the baby is 6 months old and continue to breastfeed until the baby is 2 years old to meet the baby's nutritional needs [7].

## 4.2. Stunting and LBW

Birth weight can be an indicator to see the possibility of survival, growth, long-term health, and psychological development of children. Anthropometric assessment of nutritional status in newborns by measuring weight, baby length, upper arm circumference, head circumference is a nutritional method for assessing newborns which greatly influences infant morbidity and mortality at later ages [14].

Several studies have found that there is a relationship between low birth weight (LBW) and the incidence of stunting in toddlers [15]. Another study also found that LBW children had a significant relationship with the incidence of stunting (p value <0.000) with an OR value of 6.16 (95% CI: 3,007-12,656), in other words, children born with a 6.16 times greater chance to experience stunting than children who have normal birth weight [16,20].

## 4.3. Complete Stunting and Basic Immunization

The percentage of complete basic immunization in the North Buton Regency for the last 5 years is very high and even exceeds the target that has been set. When compared

descriptively, this high percentage is not proportional to the prevalence of stunting in North Buton Regency. The purpose of immunization is to reduce morbidity, disability and death from diseases that can be prevented by immunization. Several studies have found that there is a relationship between completeness of basic immunization and the incidence of stunting [17,19].

The results of a study conducted in Kupang showed that children who did not have a history of immunization had a greater chance of experiencing stunting than children who had a history of immunization. Children who do not have a history of immunization have a chance of being stunted by 1,983 times. Another study also stated that completeness of immunization had a significant effect on stunting. Immunization has an immune effect on humans, it is needed especially at an early age which is an age susceptible to disease. The impact of frequent and easy disease is poor nutrition. Based on the results of the analysis of the risk of basic immunization history on the incidence of stunting, an OR of 6.044 was obtained. This means that respondents who have toddlers with a history of incomplete basic immunization have a 6.044 times greater risk of experiencing stunting compared to respondents who have toddlers with a history of complete basic immunization [18].

## 5. CONCLUSION

The results of this study can be concluded that the prevalence of stunting in North Buton Regency in a period of 5 (five) years is fluctuating with the highest prevalence occurring in 2017 at 44.5% and the lowest occurring in 2018 at 27.2%. It becomes a health problem if it has not reached 20%. The factor of exclusive breastfeeding in the North Buton Regency in the last 5 (five) years has not yet reached the national target of 80%. The Low Birth Weight (LBW) factor is also fluctuating in the last 5 (five) years although there is a slight increase in 2020 and the Complete Basic Immunization (IDL) factor in North Buton Regency in the last 5 (five) years period also still shows fluctuating numbers even though it has reached the target set nationally. Thus, it can be concluded that the factors of exclusive breastfeeding, low birth weight and basic immunization complete data is a determinant of the high prevalence of stunting in the North Buton Regency in the year 2016-2020.

## 6. AUTHORS' CONTRIBUTIONS

Ardan is designed the research design, compiled and collected data from various sources as needed and Ramadhan Tosepu designed the research and revise the writing.

## 7. ACKNOWLEDGMENTS

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