Research Article

Determinant of Stunting Incidence Factors in Toddlers Aged 23-59 Months in the Work Area of the Padang Tiji Community Health Center, Pidie Regency

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Abstract

Background: Aceh is ranked third nationally for child stunting in Indonesia. Currently, the government is aggressively campaigning for the prevention and handling of stunting. This is because the prevalence of stunting for infants less than five years of age (toddlers) in Indonesia in 2018 was 30.8%. Based on a report from Puskesmas Padang Tiji in 2018, there were 114 (18.4%) toddlers aged 23-59 months who experienced stunting, while in 2019 it increased to 138 (20.9%) toddlers with stunting. The purpose of this study was to analyze the incidence of stunting in children aged 23-59 months in the Padangtiji Community Health Center in 2020. **Materials & Methods:** This research method uses a case control approach. In the study, the control samples were toddlers who came to Posyandu who were randomly selected. The research sample was 50 cases and 50 controls, namely 1: 1. This research was conducted on December 10, 2020 to December 21, 2020. The statistical test used is the chi-square test by looking at the OR value and data analysis using univariate and bivariate analysis. **Results & Discussion:** The result shows that there is a relationship between exclusive breastfeeding and birth spacing with the incidence of stunting in toddlers aged 23-59 months. **Conclusion:** The suggestions are expected to further improve health promotion in the form of counseling related to the causes and prevention of stunting in order to increase knowledge mothers regarding stunting and prevention related to infectious diseases in reducing morbidity that can lead to stunting.

Keywords: Incidence of stunting; Exclusive breastfeeding; Low birth weight; Birth distance and infectious diseases

Introduction

Stunting is a linear growth disorder caused by malnutrition in chronic nutrient intake and/or chronic or recurrent infectious diseases as indicated by the Z score of height for age (TB/U) less than–2 Standard Deviation (SD). [1] Nutritional Status Monitoring (PSG) 2017 shows the prevalence of stunting fewer than five in Indonesia is still high, namely 29.6% above the limit set by WHO, which is 20%. [2] Growth and development disorders that occur during infancy are conditions that cannot be underestimated considering the impact that children with stunting will face in adulthood. Several factors that are thought to influence the incidence of stunting include illness history, mother's employment status, mother's education status, gender, number of family members, primary caregiver, nutrition fulfillment patterns, parenting patterns, birth weight of children under five, toddler health care patterns, per capita income, knowledge of mothers about nutrition and body length at birth. [3]

Malnutrition and stunting are two interrelated problems. Stunting in children is the result of nutrient deficiency during the first thousand days of life. This causes irreversible disturbances in the physical development of children, which causes a decrease in cognitive and motor skills and a decrease in work performance. Stunted children had a mean Intelligence Quotient (IQ) score, eleven points lower than the average IQ score in normal children. Disorders of growth and development in children due to malnutrition if they do not get intervention from an early age will continue into adulthood.

Stunting in toddlers needs special attention because it can cause inhibition of physical growth, mental development and health status in children. Recent studies have shown that children who are stunted are associated with poor performance in school, low levels of education and low income as adults. Children who are stunted are more likely to grow up to be unhealthy and poor adults. Stunting in children is also associated with an increase in children's susceptibility to diseases, both infectious and non-communicable diseases (PTM) and an increased risk of overweight and obesity. Long-term overweight and obesity can increase the risk of degenerative diseases. Stunting cases in children can be used as a predictor of the low quality of a country's human resources. The state of stunting causes poor cognitive abilities, low productivity, and increased risk of disease resulting in long-term losses to the Indonesian economy. [4]

Stunting is a problem caused by multiple factors. Individual

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factors and family factors can cause stunting. The bad impact that will arise from the incidence of stunting in the short term is the disruption of intellectual intelligence, brain development, physical and metabolic disorders in children. Children who are stunted before the age of 6 months will experience disrupted growth resulting in heavier stunting before the age of two. Meanwhile, the long-term impact of stunting is the large risk of contracting non-communicable diseases, deteriorating health, intellectual or intelligence and poor educational achievement during childhood. [5]

Aceh is ranked third nationally for child stunting, behind East Nusa Tenggara (NTT) and West Sulawesi (Sulbar). Currently, he explained, the government is aggressively campaigning for the prevention and handling of stunting. This is because the prevalence of stunting for infants less than five years of age (toddlers) in Indonesia in 2018 was 30.8%. This figure is above the WHO threshold of 20%. In addition, in Southeast Asia, Indonesia is also in second place after Laos. The causes of stunting are many or multifactorial. Therefore, the solution must also be done in a multi-sector manner. This is where the commitment of state leaders must be strong, which is then continued at the level of regional leaders to districts and cities. In particular, appreciation should be given to the Aceh Government because in the last five years the Aceh Government was able to reduce the prevalence of stunting from 41.5% in 2013 to 37.3% in 2018, which means that the Aceh Government saved 18 thousand children under five from stunting. However, Aceh still has to work hard because it is currently ranked as the third highest stunting prevalence in Indonesia. [6]

Based on a report from Puskesmas Padang Tiji in 2018, there were 114 (18.4%) toddlers aged 23-59 months who experienced stunting, while in 2019 it increased to 138 (20.9%) toddlers with stunting. Many factors because stunted children under five, including food intake, infectious diseases and income. Based on the data above, the researchers are interested in knowing what factors affect stunting in toddlers aged 23-59 months in the Padang Tiji Community Health Center work area in 2020.

Research Method

This research method uses a case control approach. In the study, the control samples were toddlers who came to Posyandu who were randomly selected. The research sample was 50 cases and 50 controls, namely 1:1. This research was conducted on December 10, 2020 to December 21, 2020. The statistical test used was the chi-square test by looking at the OR value and data analysis using univariate and bivariate analysis.

Results and Discussion

Univariate Analysis

Based on Table 1, it can be seen that toddlers with normal birth weight (>2500 grams) are 94% greater than toddlers born <2500 grams, which is 6%. Toddlers who are exclusively breastfed are 51% greater than babies who are not exclusively breastfed by 49%. Furthermore, at birth spacing, there was greater risk than those who were not at risk, which was 57%.

Relationship between birth spacing and the incidence of stunting in toddlers aged 23-59 months: Based on Table 2, it shows that the birth interval <24 months, the risk of experiencing stunting is 54% greater than that of children who are not stunting, which is 32%. The statistical test results obtained by the value of P=0.043, which means that there is a significant relationship between birth spacing and the incidence of stunting in children under five at the PadangTiji Health Center in 2020. Based on the OR value, the result is 2.421, meaning that children who are stunted have a 2 times greater chance if the previous birth spacing <24 months.

This study is not in accordance with research from [7] that birth spacing has a p-value of 0.0628 (>0.05) so it can be concluded that there is no significant relationship between birth spacing and the incidence of stunting in children. This is influenced by the number of samples. Which is still small while the number of variables studied is large. The results of this study are in line with research conducted by, where birth spacing was not significantly associated with stunting with a p-value of 0.176 (p<0.05).

Sufficient birth spacing allows the mother to fully recover from her postpartum condition. When the mother feels comfortable with her condition, she can create good parenting styles in caring for and raising her child. [8] Safe birth spacing is between 2-4 years. The distance between 2 pregnancies that need to be watched out for because of the possibility of unfavorable fetal growth, prolonged labor or bleeding. Conversely, if the pregnancy interval between two pregnancies is ≥ 2 years, in

Table 1. Frequency distribution of stunting, exclusive breastfeeding, birth weight, infectious diseases and birth spacing.

No.	Variable	Frequency	Percentage (%)
	Stunting incidents		
1	Stunting	50	50
	Not stunting	50	50
	Birth weight		
2	Abnormal (<2500 gr)	6	6
	Normal (>2500 gr)	94	94
	Exclusive breastfeeding		
3	Not exclusive	49	49
	Exclusive breast feeding	51	51
	Birth distance		
4	At risk	43	43
	Not at risk	57	57

Table 2. Relationship between exclusive breastfeeding, birth weight, and birth spacing with incidence of stunting in toddlers ages 23-59 months.

No	Variable	Stunting Incidents				p value	OR
		Stunting		Not Stunting			
		n	%	n	%		
	Exclusive breastfeeding						
1	a. Not exclusive	31	62	18	36	0.016	3.071
	b. Exclusive breastfeeding	19	38	32	64		(1.353-6.972)
	Infectious diseases						
2	a. yes	4	8	7	14	0.523	-
	b. No	46	92	43	86		
	Birth distance						
3	a. <24 months	27	54	16	32	0.043	2. 421
	b. >24 months	23	46	34	68		(1.071-5.475)

addition to the increasing age of the mother, it will also result in labor taking place like pregnancy and first birth.

Based on the assumption from researchers that birth spacing affects the incidence of stunting. If the birth spacing is <24 months, there is a risk that children under five will experience stunting and there are also other factors apart from the distance between the birth of child 1 and child 2 or subsequent children. Another factor that can affect the incidence of stunting is the mother's knowledge factor and also exclusive breastfeeding for the baby for 6 months without providing additional food.

Relationship between exclusive breastfeeding and the incidence of stunting in children aged 23-59 months: Based on the Table, the relationship between exclusive breastfeeding and the incidence of stunting shows that 62% of toddlers who are not given exclusive breastfeeding are stunted, higher than those who are not stunting by 36%. The statistical test results showed that the value of P=0.016, which means that there is a relationship between exclusive breastfeeding and the incidence of stunting. The OR value of the relationship between exclusive breastfeeding and the incidence of stunting is 3.071, meaning that children who are not given exclusive breastfeeding have a 3 times greater chance of experiencing stunting.

This study is in line with the study of the relationship between exclusive breastfeeding and the incidence of stunting in children aged 2-3 years. Where obtained ρ-value=0.000 (0.000 <0.05). So it is concluded that there is a relationship between exclusive breastfeeding and the incidence of stunting in children less than 2-3 years. Breast milk is nutritional intake in accordance with the needs to help the growth and development of children. Babies who do not get enough breast milk have poor nutritional intake and can cause malnutrition, one of which can cause stunting. [9]

In accordance with [10] that one of the benefits of exclusive breastfeeding is to support infant growth, especially height because breast milk calcium is absorbed more efficiently than breast milk substitutes or formula milk. So that babies who are given exclusive breastfeeding tend to have a higher height and according to the growth curve compared to babies who are given formula milk. Breast milk contains more calcium and can be absorbed by the body properly so that it can maximize growth, especially height and can avoid the risk of stunting.

Researchers argue that toddlers who are given exclusive breastfeeding are not at risk of experiencing stunting, because they are sufficiently given breast milk as a baby. Breastfeeding can also improve the nutritional status of babies so that many babies in the working area of Puskesmas Padangtiji are not stunted. Although exclusive breastfeeding is one of the factors that influence the incidence of stunting, there are other factors that influence the incidence of stunting, one of which is family income. The higher the income, the better the nutritional status of children under five.

Relationship between Birth Weight and Incidence of Stunting in Toddlers aged 23-59 months: Based on Table, it shows that toddlers with abnormal birth weight (<2500 grams) are stunted 8% more than those who are not stunted by 4%. The statistical test results obtained P value=0.678, meaning that there is no relationship between birth weight and the incidence of stunting in children under five at the PadangTiji community health center in 2020.

The results of this study are not in line with research which shows that stunting and non-stunting baduta mostly has normal birth weight. [11] The results of the chi-square statistical test showed that there was a relationship between underweight and stunting with a p-value of p=0.042, which means that there is a relationship with low birth weight among stunting and non-stunting underweight. Then obtained an OR (Odds Ratio) value of 0.157 (95% CI: 0.030-0.822), the OR value means that children under 50 who have a history of LBW are 0.157 times more likely to experience stunting than those who do not experience LBW. UTA who do not experience LBW. The results of the bblr with the results of the low odds ratio were due to the number of stunting and non-stunting baduta mostly having normal weight, even though the number of stunting baduta was more likely to have had weight (35%) than the non-stunting baduta (8%). This can be due to the economic status of the family, from the results of the study it was found that parents of baduta stunting had an income level less than the UMK than non-stunting, which was 92.3%.

Poor hygiene practices can lead to the emergence of bacteria. Bacteria can enter through food that is usually served and can affect the health of the child, one of which is diarrhea and can cause the child to lose fluids and a number of nutrients that are essential for the body. [12] A child with diarrhea will experience malabsorption of nutrients and a long duration of diarrhea (more than four days) will make the child experience more nutritional loss, if not treated immediately with appropriate intake, it can

cause growth failure. Diarrhea that occurs in the first two years of life can affect the occurrence of growth retardation. [13] Children who are malnourished will have low resistance to diseases so that they are exposed to infectious diseases such as diarrhea and ARI, which affect children's cognitive development and inhibit growth. [14]

The assumption of the researchers was that birth weight had no effect on the incidence of stunting in children under five. Because the baby's birth weight is low if the baby is given adequate nutrition and is given exclusive breastfeeding for 6 months without being given additional food, it can improve nutrition in these babies. So that toddlers will not experience stunting.

Conclusion

Based on the research that has been done, it can be concluded that there is a relationship between exclusive breastfeeding and birth spacing with the incidence of stunting with a value of P <0.05 with OR=3.071 and OR=2.421, respectively. Meanwhile, birth weight with the incidence of stunting had no relationship with P value<0.05

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