



## RISK FACTORS OF EVENTS *STUNTING* IN TODDLERS AGED 1-5 YEARS

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### ABSTRACT

*Stunting* is one of the nutritional problems faced by the world, especially in poor and developing countries *Stunting* become a health problem because it is associated with the risk of morbidity and mortality, suboptimal brain development, resulting in delayed motor development and retarded mental growth. Building Village Pakuon is suffering from environmental conditions around the toddler's house *stunting*. there is still a physical quality of clean water that does not meet health requirements. There are still mothers of toddlers aged 1-5 years who pay little attention to personal hygiene, especially washing hands before and after eating. Objective to analyze the risk factors for events *Stunting* in toddlers aged 1-5 years in the village Pakuon Building Working Area of UPTD Tanjung Lengkap Public Health Center, OKU Regency The type of research used was a research design *Cross Sectional* The population of all mothers aged 1-5 years in Gedung Pakoun Village is 152 toddlers, the sample in this study is 110 samples. Bivariate analysis shows that mother's knowledge is *valuep value 0.000* means that statistically there is a significant relationship between mother's knowledge and events *stunting*. While the parents' income *valuep value 0.000* means that statistically there is a significant relationship between parental income and incidence *stunting*. Physical quality of water *valuesp value 0,000*. This means that there is a significant relationship between the physical quality of water and the occurrence *stunting*. Then the value of hand washing habits *sp value 0,002*. meaning that statistically there is a significant relationship between the habit of washing hands with the incident *stunting*. There is a significant relationship between mother's knowledge, parents' income, physical quality of water and hand washing habits *stunting* in toddlers 1-5 years.

**Keywords:** income physical quality of water; knowledge; *stunting*; washing hands under five

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### INTRODUCTION

The state of good and healthy nutrition in infancy is an important foundation for health in the future. Malnutrition that occurs during this period can result in disruption of growth and development. The process of rapid growth and development especially occurs at the age of 1-5 years. Under normal circumstances, height increases with age. Linear growth that is not age-appropriate can reflect a state of malnutrition in the long term which will result in *stunting* in children (Baliwati, 2012). *Stunting* is a nutritional problem that has a negative impact on the quality of life of children in achieving optimal growth and development according to their genetic potential *Stunting* can inhibit the process of growth and development in infants *Childhood stunting* or short stature in childhood is the result of chronic malnutrition or failure to thrive in past and used as a long-term indicator of under nutrition in children (Ministry of Health, 2018).

Stunting describes a chronic malnutrition status during the period of growth and development since the beginning of life. This condition is represented by a z-score for height for age (TB/U) less than -2 standard deviations (SD) based on WHO growth standards (WHO, 2018). Globally, in 2017 there were 25% of children under the age of five, namely around 165 million children experiencing stunting (WHO 2017). *Stunting* is a nutritional problem that has a negative impact on the quality of life of children in achieving optimal growth and development according to their genetic potential. *Stunting* can inhibit the process of growth and development in infants. *Childhood stunting* or short stature in childhood is the result of chronic malnutrition or failure to thrive in past and used as a long-term indicator of under nutrition in children (Ministry of Health, 2018). The negative impact that can be caused by nutritional problems during this period, in the short term, is the disruption of brain development, intelligence, physical growth disorders, and metabolic disorders in the body. Meanwhile in the long term

The negative consequences that can be caused are decreased cognitive ability and learning achievement, decreased immunity so that people get sick easily, and are at high risk of developing diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disability in old age, as well as poor quality of work. uncompetitive which results in low economic productivity (Ministry of Health, 2018). Children who experience stunting in the first two years of life have a very strong relationship with cognitive delays in childhood later and have a long-term impact on the quality of resources (Brinkman, 2020). Stunting events that have taken place since childhood have a relationship with slow motor development and lower levels of intelligence (Martorell 2020). Other studies have shown that children (9-24 months) who are stunted, besides having a lower level of intelligence, also have lower ratings on locomotors, hand and eye coordination, hearing, speech, and performance when compared to normal children. (Change 2020).

The problem of stunting (short children) is one of the nutritional problems faced by the world, especially in poor and developing countries. Stunting is a health problem because it is associated with the risk of morbidity and death, suboptimal brain development, resulting in delayed motor development and stunted mental growth. This is a serious threat to the existence of children as the next generation of a nation. Short children are widely accepted predictors of the poor quality of human resources, which further reduces the productive capacity of a nation in the future (Yusdarif, 2017). Lower family economic status tends to have stunted children (Lee 2020). From the results of the nutritional status assessment (PSG 2018) conducted in the city of Binjai, there is still a high number of toddlers who experience stunting, namely 27%, this result has exceeded the average stunting in North Sumatra, which is 24%. In accordance with research results according to WHO, if the stunting problem is above 20 % then it is a public health problem. Based on the results of the PSG city of Binjai above, the researchers conducted a preliminary survey in the form of an initial screening in the Jati Makmur sub-district for mothers who had children aged 6-23 months. In a survey conducted on 29 children measured there were 24.13% of children who experienced stunting. These results have equated the stunting problem in all of North Sumatra, namely 24.4%. At this time toddlers as the next generation of the nation which are expected to become quality human resources in the future require special attention. Age under five years is a "golden age" in the formation of human resources both in terms of physical growth and intelligence, where this must be supported by good nutritional status because nutritional status plays a role in determining the success or failure of efforts to increase human resources (Ministry of Health, 2018).

In Indonesia, based on the results of basic health research (Riskesdas) in 2018, 37.2% of children under five are stunted. It is known from the total percentage, 19.2% of children are short and 18.0% are very short. The prevalence of stunting has increased compared to the 2018 Riskesdas results, which was 35.6%. At the Asian level in 2015-2017 Indonesia was ranked fifth with the highest prevalence of stunting. According to WHO, if the stunting problem is above 20% then it is a public health problem. Several studies have shown that children who experience stunting in their toddler years have low cognitive levels, poor learning and psychosocial achievements (Achadi 2019). Based on detailed data for 2018 toddlers who experience stunting in 17 districts/cities in South Sumatra, namely Lahat Regency 48.10%, Ogan Ilir 43.90%, Pali 39.50%, Empat Lawang 36.00%, Musi Rawas 34, 60%, Muara Enim 34.40%, Muratara 33.20%, OKU 33.20%, Lubuk Linggau 32.00%, Pagar Alam 31.90%. Then, Musi Banyuasin 31.10%, OKI 30.60%, Banyuasin 29.30%, OKU East 27.20%, OKU 26.40%, Prabumulih 26.20%, Palembang 25.90% (Apriani, 2020).

**METHOD**

The research design used is a research design *Cross Sectional*, where the independent variable and the dependent variable are observed simultaneously at the same time. The population in this study were all toddlers aged 1-3 years in Gedung Pakuon Village, namely 152 toddlers. The sample in this study were 110 toddlers. The research location was in the village. The research location was in Gedung Pakuon Village, the working area of the UPTD Tanjung Lengkayap Health Center, OKU Regency. The time for carrying out this research or data collection was carried out during April - July 2022.

**RESULTS**

Table 1.  
The frequency distribution of each variable studied (n=110)

Variable	f	%
<i>Incident Stunting In Toddlers</i>		
<i>Stunting</i>	36	32,7
Normal	74	67,3
<i>Mother's knowledge</i>		
Not good enough	41	37.3
Good	69	62.7
<i>Parents income</i>		
Low	35	31.8
Height	75	68.2
Total	110	100
<i>Physical Quality of Clean Water</i>		
Not meeting the requirements	45	40.9
2Fulfilling the conditions	65	59.1
<i>Hand washing habit</i>		
Not good	40	36.4
Good	70	63.6
<i>Hand washing habit</i>		
Not good	40	36.4
Good	70	63.6

The results of the univariate analysis for each variable showed that 36 toddlers (32.7%) were stunted, 41 (37.3%) had poor maternal knowledge, 35 (31.8%) parents had low income, 45 (40.9%) did not meet the physical quality requirements of water %) and bad hand washing

habits by 40 (36.4%). From the results of bivariate analysis with statistical tests *Chi-Square* shows that, there is a significant relationship between exclusive breastfeeding with incidence of stunting in toddlers with *p value* 0.000. there is a significant relationship between mother's knowledge and the incidence of stunting in toddlers with *p value* 0.000, there is a significant relationship between income and the incidence of stunting in toddlers *p value* 0.000, there is a significant relationship between the physical quality of water and the incidence of stunting in toddlers *p value* 0.002 and there is a significant relationship between hand washing and the incidence of stunting in toddlers.

Table 2.

Analysis of the Relationship of Independent Variables with Dependent Variables (n=110)

Mother's knowledge	Incident Stunting		Total	ρ Value
	Stunting	Normal		
Low	28	13	41	
	68.3%	31.7%	100.0%	
High	8	61	69	0.000
	11.6%	88.4%	100.0%	
Physical Quality of Water	Incident Stunting		Total	ρ Value
	Incident Stunting	Normal		
Low	24	11	35	
	68.6%	31.4%	100.0%	
High	12	63	75	0.000
	16.0%	84.0%	100.0%	
Hand washing habits	Incident Stunting		Total	ρ Value
	Stunting	Normal		
Not good	21	19	40	
	52.5%	47.5%	100.0%	
good	15	55	70	0.002
	21.4%	78.6%	100.0%	

**DISCUSSION**

Knowledge will determine the mother's behavior in providing the right type and amount of food so that her child can grow and develop optimally. and the right food menu for toddlers in an effort to improve nutritional status will be realized if the mother has a good level of nutritional knowledge ignorance about information about nutrition can lead to a lack of quality or nutritional quality of food for families, especially for food for food consumed by toddlers (Kusharisupeni, 2019). Knowledge will determine the mother's behavior in providing the right type and amount of food so that her child can grow and develop optimally. and the right food menu for toddlers in an effort to improve nutritional status will be realized if the mother has a good level of nutritional knowledge ignorance about information about nutrition can lead to a lack of quality or nutritional quality of food for families, especially for food for food consumed by toddlers (Octavina, 2017).

One of the causes of nutritional disorders is a lack of nutritional knowledge and the ability of a person to apply information about nutrition in everyday life, the level of maternal nutrition knowledge affects attitudes and behavior in choosing food ingredients, which will further affect the nutritional state of the family, knowledge greatly influences the incidence of stunting . Knowledge is obtained from various sources, such as leaflets, posters, counseling, the internet, and so on. With today's technological advances, the internet can be put to good use to provide education about stunting, for example the widespread dissemination of stunting

communication, information and education through social media, and so on to increase mother's knowledge (Arifin, 2018).

The results of research conducted by Khoirun in 2015 in the working area of the Tanah Kali Kendinding Public Health Center, Surabaya City in 2015, found that mothers of toddlers who have stunted children (61.8%) have lower knowledge than mothers who have normal children or not stunted, namely 29.4%. The results of the chi-analysis square shows that mother's knowledge is a factor related to the incidence of stunting in toddlers with a p value of 0.001 (Markum, 2017). Family income is related to the household's ability to meet primary, secondary and tertiary needs. High family income makes it easier to meet life's needs, on the contrary, low family income has more difficulty in meeting life's needs. Low income will affect the quality and quantity of food consumed by the family. Low levels of income and weak purchasing power make it possible to overcome eating habits in certain ways which hinder effective improvement of nutrition especially for their children. The food that is obtained will usually be less varied and in small quantities, especially in materials that function for the growth of children as sources of protein, vitamins and minerals, thereby increasing the risk of malnutrition. These limitations will increase the risk of family members experiencing stunting (Kartikawati, 2019).

In line with research conducted by Magdalena 2019 in Tembalang District, Semarang City which stated that family income is a risk factor for stunting. Based on the results of the Fisher's Exact test, a p value of 0.002 ( $p \leq 0.05$ ) was obtained so that it can be said that there is a relationship between the level of family income and stunting in toddlers. Basically, the physical quality of water is inseparable from where the water is obtained. From the results of this study, it shows that there is a relationship between the physical quality of water and the incidence of stunting. This can happen because based on the results of the water source data, some respondents who fall into the category of not meeting the requirements experience problems in the physical quality of water (Aini, 2019). In line with research conducted by (Achadi, 2019) the factors that are related to the incidence of stunting in toddlers that there is a relationship between the physical quality of water and the incidence of stunting in toddlers in Bena Village, East Nusa Tenggara. With a p value = 0.002.

The hygiene factor, namely the habit of washing hands, is also a risk factor that plays an important role in the occurrence of stunting at the household level. Washing hands with soap is a hygiene activity, namely the activity of cleaning hands with running water and soap so that they are clean and can break the chain of germs. The Ministry of Health of the Republic of Indonesia has set important times for washing hands with soap so that it becomes a habit, namely before eating, before processing and serving food, before breastfeeding, before feeding infants/toddlers, after defecating/urinating, after contact with animals (Gibson, 2018.). In line with the research conducted by Nasrul 2018, it was proven based on the results of the chi square test showing a p value of 0.000 ( $<0.05$ ), which means that there is a significant relationship between the habit of washing hands and the incidence of stunting in toddlers (Nasrul, 2018).

Mother's knowledge is high but toddlers suffer from *stunning* due to the possibility that the mother does not run out of food and does not continue to feed the toddler or the toddler's food is immediately thrown away. It is hoped that the Puskesmas can partner with human development cadres (KPM) to carry out socialization and counseling activities to increase the knowledge of parents of toddlers regarding the nutritional needs of families, especially toddler nutrition, with counseling it is hoped that the community can obtain knowledge about toddler

health and nutrition to prevent *stunting* in toddlers. Several respondents with low incomes received PKH assistance from the government, but the funds were used for school needs and other things. Respondents' income is high but toddlers suffer *stunting* caused by toddler mothers not knowing how to process food according to the nutritional needs of toddlers, balanced nutrition for toddlers tends to have more carbohydrates, sugar and fat, such as from fried foods. pay attention to the condition of the physical quality of clean water by ringing the well and keeping trash cans away from sources of pollution. To health workers to be able to provide counseling and education to the public about protecting dug wells from sources of pollution so that the physical quality of dug well water meets health requirements. Hand washing habits are good and toddlers suffer *stunting* caused by cleanliness when the mother prepares food, for example when washing vegetables not in running water so that it can cause infection, repeated infections in toddlers can cause incidents *stunting* For this reason, parents are expected to pay more attention to personal hygiene for toddlers, especially the habit of washing hands with soap before and after eating, after defecating and after playing. Health workers should be able to educate mothers of toddlers about the importance of washing hands with soap to prevent disease, especially incident *stunting* in toddlers.

## CONCLUSION

Based on the results of the study, it was concluded as follows. There is a significant relationship between mother's knowledge, parents' income, quality of clean water, hand washing habits with the incident *stunting* in toddlers. It is hoped that the Puskesmas can partner with human development cadres (KPM) by conducting socialization and counseling activities to increase the knowledge of parents of toddlers regarding the nutritional needs of families, especially toddler nutrition. The Village Government provides financial support through village funds with the aim of increasing Posyandu activities in the village *stunting* in toddlers.

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