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SOCIAL AND PHYSICAL ENVIRONMENT WITH STUNTING INCIDENTS IN TODDLERS

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ABSTRACT
Stunting is a global problem that is very trending and requires serious attention throughout the world. The problem of stunting is an intergenerational problem that requires recovery over a longer period of time compared to other forms of malnutrition. The aim of the research is to analyze the relationship between the social environment and sanitation with the incidence of stunting among toddlers in the Maubesi Community Health Center area, TTU Regency. Method: used was quantitative with a cross sectional research design. The total population is all mothers who have stunted toddlers at the Maubesi Community Health Center, 275 people. The sample for this study was 60 parents who had stunted toddlers. Data collection through questionnaires and KIA books. The research data was explained bivariately using the chi square test. The research results show that. The social environment that has a significant relationship with the incidence of stunting is parental education (p value = 0.000), and family income (p value = 0.021). The physical environment that has a significant relationship with the incidence of stunting is clean water sources (p value = 0.001)). The conclusion is that there is a significant relationship between the social and physical environment and the incidence of stunting in the Maubesi Health Center Working Area, North Central East Regency.

Keywords: environment; physical; social; stunting

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INTRODUCTION

Stunting is a global problem that is very trending and requires serious attention throughout the world. The problem of stunting is an intergenerational problem that requires recovery over a longer period of time compared to other forms of malnutrition. According to WHO, stunting is a condition of shortness based on age which is characterized by a height or body length index value according to age (TB/U or PB/U) of less than -2 standard deviations (WHO, 2015). Stunting is a disruption in the growth and development of children due to chronic malnutrition and recurrent infections, which is characterized by their length or height being below the standards set by the Minister of Health (Presidential Decree No. 72, 2021).

According to Siswati (2018), the factors causing stunting are based on the concept of social determinants of health, namely the first is the social environment which includes political and social policies at the macro level, poverty and socio-economic inequality, parents' socio-economic status, family structure. The two physical environments include sanitation and clean water, indoor pollution, cooking fuel smoke pollution, living setting. The three biological environments include gender and age of toddlers, consumption and

supplementation of micronutrients (breast milk, Vitamin A supplements), iodine, infectious diseases, parents' height, parents' social status, including education level and socio-economic status, which has a very close relationship with the pattern of a person's life or health behavior.

According to the World Health Organization 2017, as many as 155 million (22.9%) children under five in the world suffer from stunting, while 41 million children under five (6%) are overweight and 52 million children under five (7.2%) are underweight (Siswati, 2018). According to the Indonesian Ministry of Health (2021), data from the Indonesian Nutritional Status Study (SSGI), shows that malnutrition based on the height-for-age index (TB/U) in 2021 with a percentage of stunted (very short and stunted) is 24.4%. e-PPBGM data for very short baduta is 2.7% and short baduta is 6.5%. East Nusa Tenggara is a province that is ranked 4th after the provinces of West Sulauwesi, NTB, West Papua with data on very short baduta at 4.8% and short at 11.5%. Data in Indonesia at the age of under five is very short at 2.5% and short at 7.0%. NTT is ranked 2nd after West Sulauwesi with very short toddlers at 5.5% and short children at 15.7%. Stunting data in TTU Regency in 2019 was 7,466 people (42.58%).

According to Siswati (2018), the factors causing stunting are based on the concept of social determinants of health, namely the first is the social environment which includes political and social policies at the macro level, poverty and socio-economic inequality, parents' socio-economic status, family structure. The two physical environments include sanitation and clean water, indoor pollution, cooking fuel smoke pollution, living setting. The three biological environments include gender and age of toddlers, consumption and supplementation of micronutrients (breast milk, Vitamin A supplements), iodine, infectious diseases, parents' height, parents' social status, including education level and socio-economic status, which has a very close relationship with the pattern of a person's life or health behavior. The impact that occurs on a child with stunting is that it can affect the function and structure of the brain, as well as hamper the child's mental development. Children have less learning achievement at school, children are less productive as adults and contribute to the transmission of poverty and income inequality. Children will be easily affected by infectious diseases and children will be at high risk of chronic diseases when adults are at risk of death. (WHO, 2018).

According to research results from Zogara (2020), it shows that factors related to the incidence of stunting are the education of the father and mother, the number of family members, and the mother's knowledge of nutrition. Meanwhile, father's work and mother's work are not related to the incidence of stunting. Nutrient intake that is related to the incidence of stunting, namely protein and fat intake. Meanwhile, carbohydrate intake is not related to the incidence of stunting. According to the results of Hina's research (2021) in the Camplong Health Center Work Area, it was found that of 166 children under five, 64.5% of children under five who did not have less nutritional intake experienced stunting than children under five who had sufficient and good nutritional intake. According to the research results of Thobias and Djokosujono (2021), the final results of multivariate analysis modeling show that food diversity or minimum dietary diversity is the variable that has the most influence on the incidence of stunting, controlled by the variables breastfeeding status, minimum meal frequency, and minimum acceptable diet. Toddlers who do not meet the minimum dietary diversity are 12.3 times more likely to experience stunting than toddlers who meet the minimum dietary diversity.

Some efforts to prevent and handle nutritional problems that need to be carried out are efforts to improve individual nutrition and community nutrition in an effort to implement balanced nutrition. Families are expected to be able to recognize, prevent and overcome nutritional problems, namely by regularly weighing toddlers every month, providing exclusive breastfeeding until the baby is 6 months old, providing a variety of foods, using iodized salt in the family, providing nutritional supplements as recommended by health workers. such as vitamin A capsules, blood supplement tablets, additional food for pregnant women, toddlers, complementary foods for breast milk and multivitamin and mineral powder (Ministry of Health of the Republic of Indonesia, 2021). Other efforts that need to be made to overcome stunting in children include stimulating detection and early intervention of growth and development through monitoring children's growth and development, through weighing at Posyandu every month, while reducing the prevalence of stunting is carried out in pregnant women (integrated ANC guarantee efforts), toddlers (for example, monitoring the growth of toddlers), school-age children (revitalizing UKS, etc.), teenagers (increasing promotion of PHBS, balanced nutritional patterns, etc.), and also young adults (carrying out early detection of diseases, etc. others) (RI Minister of Health Regulation No. 39, 2016). The aim of the research is to analyze the relationship between the social environment and the physical environment with the incidence of stunting in the Maubesi Community Health Center Working Area, TTU Regency.

METHOD

This type of quantitative research with a cross sectional research design. The population in this study was all 275 children experiencing stunting recorded in the Maubesi Community Health Center Working Area, TTU Regency in February 2022. The total population was then selected as stunting children aged 24 to 59 months, stunting so that the total population was 218 people. The sample size in this study was 60 parents and stunted toddlers. The inclusion criteria are parents who have children under five with stunting, domiciled in the Maubesi Health Center Working Area (± since the last 1 month), parents are willing to become informants. Meanwhile, the exclusion criteria: stunted toddlers who are sick and being treated in hospital, children have physical abnormalities related to the shape of the spine and legs, and parents are not willing to become informants.

The independent variables in this research are the social environment: parental education and family income and physical environment, among others; clean water source. The dependent variable in this research is stunting. Primary data collection techniques used interview techniques, and filling in questionnaires and secondary data from the nutrition report of the Maubesi Public Health Center, TTU Regency. Research instruments can be standard measuring instruments, questionnaires, KIA books. From the validity test, the correlation coefficient (r_{xy}) calculation results showed that all of them had a calculated r that was greater than the r table (0.1967) so that all questions were said to be valid and the results of the reliability test obtained that the Cronbach's alpha coefficient for all variables used in this study was greater than the r table, namely (0.1967), so that all questions were declared reliable. The data analysis used was univariate and bivariate analysis with the chi-square test. The research location is the Working Area of the Maubesi Community Health Center, TTU Regency.

RESULTS

Table 1.
Characteristics of Respondents on Stunting Incidents among Toddlers (n=60)

Child's Gender	f	%
Man	28	46.7
Woman	32	53.3
Child Age		
1 years	8	13.3
2 years	14	23.3
3 years	17	28.3
4 years	14	23.3
<5 years	7	11.7

Table 1 shows that the gender of the child is mostly female, 32 respondents (53.3%) and the least male, 28 respondents (46.7%). The most common age of toddlers was 3 years old as many as 17 respondents (28.3%) and the lowest age was less than 5 years old as many as 7 respondents (11.7%)

Table 2.
The Relationship between the Social Environment and Stunting Incidents in Toddlers (n=60)

Social environment	f	%	*p. value*
Mother's education			
Elementary school	38	63.3.	0.000
Junior high school	9	15.0	
Senior high school	11	18.3	
Diploma/Bachelor degree	2	3.3	
Pendapatan Keluarga			
100.000-300.000	49	81.7	
400.000-600.000	1	1.7	0.021
700.000-1.000.000	8	13.3	
> 1.00.000-3.000.000	7	11.7	
> 3.000.000	2	3.3	

Table 2 univariate analysis shows that the majority of parents' education is elementary school as many as 38 respondents (63.3%) and the majority of family income is 100,000-300,000 as many as 49 respondents (81.7%) while bivariate analysis shows that the social environment that has The significant relationship with the incidence of stunting is parental education (p value = 0.000) and family income (p value = 0.021).

Table 3.
The Relationship between the Physical Environment and the Incident of Stunting in Toddlers

Physical Environment	F	%	*p value*
Clean water source			
Dig well	53	88.3	0.001
PAM	1	1.7	
River	6	10.0	

Table 3 univariate analysis shows that the majority of sources of clean water in the family are from dug wells, 53 respondents (88.3%). Meanwhile, bivariate analysis shows that the physical environment that has a significant relationship with the incidence of stunting is clean water sources (p value = 0.001).

DISCUSSION

In this discussion, the researcher examines the factors causing stunting based on the concept of social determinants of health, namely the first is the social environment which includes the socio-economic status of parents: education and family income, family structure. Second, the physical environment includes sanitation and clean water (Siswati, 2018).

Social Environment: Education with Stunting Incidents in Toddlers

Parental education is one of the most important factors in children's growth and development, because if parental education is good then parents will easily get information from outside about how to raise children well, maintain children's health and how to educate children well (Soetjiningsih, 2016). The higher the level of parental education, the better opportunities to obtain decent work and income. This will of course have an impact on the family's ability to purchase and provide nutritious food in the household, affordability in utilizing health facilities, affordability in educational services and organizing a healthy home environment and providing good parenting patterns for children (Bradley, 2002; Khongsdier, 2016; Mosley & Chen, 1984, Egerter, 2009).

The research results show that the social environment, namely parental education, has a significant relationship with the incidence of stunting (p value = 0.000 < α 0.005). According to the researchers' assumptions, the majority of parents' education level in the Maubesi Health Center Working Area is elementary school. This of course makes it difficult to access information, resulting in low knowledge and understanding of parents in providing nutritious food for children and raising good children. If a person's education is good, a person's knowledge and understanding will increase, resulting in clean and healthy living behavior, providing opportunities for a person to get a good job and income and also get good social and psychological support (Siswati, 2018). Parents with a high level of education will find it easier to get information and quick access regarding nutritious food for toddlers so that parents directly practice implementing good parenting patterns for their children (Emamian et al., 2013) while parents with a lower level of education low, their knowledge will also be lacking and very limited in implementing good parenting patterns and providing good nutritious food to their children, so that their children will be at risk of experiencing malnutrition (Mushtaq, 2011). Research in line with Ajao, Ojofeitimi, Adebayo (2010) & Jesmin et al., (2011) shows that mothers with low education have a greater risk, namely 3.4 times the average value of the child's TB/U Z-score. with mothers with low education tends to be lower when compared with mothers with medium and high education. This research is also in line with research by Panggaribuan (2022), which shows that the results of a multivariate analysis of maternal education show that the POR value = 2.066 (95% CI: 0.667-6.396), meaning that mothers with low education have a 2.0 times higher risk of having children under five. stunting compared to mothers with higher education. Nirmalasari's research (2022), shows that mothers with low education have a risk of stunting of 2,783.

Social Environment: Family Income with Stunting Incidents in Toddlers

According to Akombi et al., 2017 in Siswati (2018), the family's economic status greatly influences the family's purchasing power, access to adequate education, quality health services and meeting adequate food needs. Children who come from low family economic status have a higher risk of experiencing malnutrition compared to children who come from high family economic status. Several studies show that poverty and social problems including not working, low maternal health status are closely related to low child quality (Mushtaq et al., 2011, Akombi et al., 2017). The results of this study show that the social environment, namely family income, has a significant relationship with the incidence of stunting (p value =

0.021< α 0.005. According to the researcher's assumption that the majority of parents' income in the Maubesi Health Center Working Area is in the low category, namely 100,00-300,000 per month, this is causes difficulties for families in purchasing and providing nutritious and varied food ingredients in the home, causing the food consumed by children to not contain balanced nutrients so that children experience stunting.

The family's economic status influences the family's ability to fulfill nutritional requirements and the ability to obtain adequate health services. Children at a low family economic level are more at risk of experiencing stunting because the ability to fulfill nutrition in the family is low so that children experience malnutrition (Sambriong and Banhae, 2023). Supporting research according to Nirmalasari (2020) shows that household socio-economic status is related to stunting. Different research according to Panggaribuan (2022) shows that there is no significant relationship between parental income and the incidence of stunting (p value = 0.067). Nirmalasari's (2022) research shows that mothers with low incomes have a risk of stunting of 3,095, which means that children from families with low incomes will experience stunting 3,095 times greater than children from families with high incomes.

Physical Environment: Clean Water Sources with Stunting Incidents in Toddlers

Water has an important role for human life. Water is used by humans for bodily needs and water as a thirst quenching agent. Using clean water in the family will prevent various diseases such as diarrhea, typhus and others. Access to clean water is the 6th SDG target. Lack of access to clean water and lack of good sanitation will increase the incidence of stunting in toddlers. Many studies show that clean water, sanitation and other aspects of environmental health are closely related to the incidence of stunting (Siswati, 2018). One of the causes of stunting is the physical environment, namely the inadequate availability of clean water. A poor physical environment such as a clean water source that is not sufficient for the family's needs greatly contributes to a clean and healthy lifestyle and poor family personal hygiene so that it can be at risk of increasing infectious diseases such as diarrhea, Environmental Enteric Dysfunction (EED), filariasis in children so that it has an impact on growth disorders in children (Siswati, 2018). The research results show that the social environment, namely clean water sources, has a significant relationship with the incidence of stunting (p value = 0.001 < α 0.005). According to researchers' assumptions, most of the sources of clean water used by families for their daily needs in the Maubesi Community Health Center Work Area are dug wells which are less than 10 meters from livestock pens and septic tanks (feces storage), this is what causes contamination of clean water sources. This causes children to easily experience digestive tract infections such as diarrhea which has an impact on stunting.

Sources of protected drinking water include water from processing units (PDAM), bottled water, while sources of unprotected drinking water come from river water, well water and rainwater. Some sources of unprotected drinking water increase the risk of diarrheal disease in toddlers. Unprotected drinking water sources are more at risk of diarrhea. Toddlers who experience chronic diarrhea will hamper the child's growth (Adzura et al. 2021). The availability of unimproved drinking water comes from unimproved sources, the water source is too close to latrines, and inappropriate water treatment before consumption can cause nutritional disorders in children. This happens because the water contains pathogenic microorganisms and other chemicals, causing children to experience diarrhea and EED. If diarrhea continues for more than two weeks, it can result in nutritional disorders in the form of stunting in children. Therefore, families need to pay attention to the need for safe drinking

water starting from protected water sources, quantity, quality, storage and processing of water, especially at 1000 HPK to prevent and reduce the incidence of stunting in toddlers (Olo et al, 2021).

This research is in line with research by Adzura (2021) showing that there is a relationship between access to clean water and the incidence of stunting in toddlers with an OR value range of 1.21 to 5.99 times. The same research according to Pangribuan (2022) shows that there is a significant relationship between clean water sources and the incidence of stunting (p value = 0.041) and a POR value of 3.167 (95% CI: 0.952-10.527) which means that children under five who live in environmental areas are Clean water sources that do not meet health requirements will have a 3.1 times higher risk of experiencing stunting compared to toddlers who live in an environment where clean water sources meet health requirements. Research is in line with Nisa et al, (2021) that there is a significant relationship between sanitation and clean water supply and the incidence of stunting (p value = 0.047, OR = 2.705). According to research by Soraya et al, (2022) shows that there is a significant relationship between clean water sources and the incidence of stunting in the Simpang Tuang Work Area, East Tanjung Jabung Regency, where the prevalence ratio (PR) value = 4.427 (95% CI 2.809-6.978), which means Respondents who have poor clean water facilities have a 4.427 times higher risk of stunting for toddlers than respondents who have good clean water facilities.

CONCLUSION

There is a significant relationship between the social and physical environment and the incidence of stunting in the Maubesi Health Center Working Area, North Central East Regency.

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