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CORRELATION OF SANITATION WITH STUNTING IN MANDER VILLAGE, TAMBAKBOYO DISTRICT. TUBAN REGENCY

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ABSTRACT

***Background**: Stunting is one of the most critical malnutrition problems globally caused by multiple factors. Sanitation of the family environment, especially unhealthy ones, both from the criteria for housing, sanitation facilities owned and the behavior of household residents can increase the risk of stunting in toddlers. **Objectives:** This study aims to analyze the correlation between environmental sanitation and the incidence of stunting. **Method:** The study used a quantitative study with a correlational analytic research design, the population is all stunting in Mander Village, Tambakboyo District Tuban Regency in March 2024, as many as 42 toddlers were obtained by total sampling technique. Collecting data using a healthy home observation sheet and measuring height according to age, then the data was analyzed by using the Spearman Rank correlation test with a significance level of 0.05 **Result:** Most of respondent with unhealthy home environment sanitation as many as 28 respondents (66.6%), most of the toddlers experienced stunting in the short category as many as 23 toddlers (54.7%) and there was a significant relationship between sanitation and the incidence of stunting. stunting in children under five at the Mander Village, Tambakboyo District, Tuban Regency in 2023 (ρ value 0.001; r 0,725). **Conclusion:** There is a significant relationship between environmental sanitation and the incidence of stunting. Unhealthy home environment sanitation will increase the risk of children suffering from stunting greater than children from families with healthy home environment sanitation*

1. INTRODUCTION

According to UNICEF and WHO, stunting is a common food problem among children, especially toddlers. Stunting occurs when a person's height is below average for their age and gender. Stunting is described by comparing the height z score per age from the global growth graph. Environmental variables influence nutrition. The home environment is an important indication of family health and optimal health for both the individual family and the family unit (Aryu Chandra, 2020)

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Globally in 2017, 22.2% or around 150.8% of millions of children under five experienced stunting. This figure has

decreased in 2018, namely 21.9% (149 million children under five), and continues to decline in 2019, namely 21.3% (144 million children under five).). Toddlers with Height according to Age index measurements entered were 49.2% of the existing target toddlers. Of the target toddlers in the entry, it was found that 349,157 (3.0%) toddlers were very short and 980,565 (8.5%) toddlers were short. In 2019, stunting in East Java was 26.85%, and decreased in 2020 by 25.64 and decreased again in 2021 by 23.5% (JATIM Health Office, 2020). Of the 39,100 toddlers aged 0-59 months who were weighed, there were 6,196 malnourished toddlers (9.4%), 8,232 short toddlers (12.5%) and 5,416 underweight toddlers (8.3%). In 2020. In 2022, the Tambakboyo Health Center stunting rate will reach (13.5%)(Dinas Kesehatan Provinsi Jawa Timur, 2022)

Nutritional problems are closely related to environmental factors. Poor sanitation can cause diarrhea and worms in toddlers, disrupting vitamin absorption. Babies with infectious diseases may lose weight. Long-term exposure can cause stunting (Kementrian Kesehatan RI, 2020). Family arrangements must pay attention to household sanitation. Poor sanitation can encourage infectious infections which can hinder the development of children under five (Wiyono et al., 2022). Poor environmental sanitation can cause various health problems. Several diseases related to environmental health include ISPA, pulmonary tuberculosis, diarrhea, dengue hemorrhagic fever (DHF), malaria, and typhoid fever (Ashar, 2020). Poor cognitive scores, less likely to attend college, and lower wages result from stunting. Stunting causes metabolic syndrome/PTM (Siswati, 2022).

Apart from that, the short-term impacts of stunting include disruption of brain development, reduced intelligence, impaired physical growth and metabolic disorders in the body. Meanwhile, the long-term impacts of stunting include decreased cognitive abilities and learning achievement, decreased immunity resulting in easy

disease, and a high risk of developing diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disability in old age (Tim Indonesiabaik.id, 2022)

Sanitation has an important role in reducing stunting because it is closely related to efforts to prevent disease infection. Good environmental sanitation can be measured using the Healthy Home Indicator, namely a residence with the necessary facilities and services, equipment that is beneficial for physical and spiritual health, and good social conditions for families and individuals. According to the Indonesian Health Departement, environmental health components or healthy home assessment include household cleanliness, sanitation facilities and occupant behavior.(Kementrian Kesehatan RI, 2020)

Based on the description of this problem, researchers were motivated to conduct research on the relationship between sanitation and the incidence of stunting in Mander village, Tambakboyo district. It is hoped that this research can contribute as a reference for handling stunting programs related to environmental sanitation.

2. METHODE

The study used analytics research with a retrospective approach, namely a type of research to analyze the relationship between sanitation and the incidence of stunting in the working area of the Tambakboyo Health Center (Tambakboyo District, Tuban Regency)." Retrospective research is research in the form of observing events that have occurred, aiming to look for factors related to causes, in other words,

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effects (disease or health status) identified at this time, then measuring causal variables that have occurred in the past or future. past, by asking respondents with questionnaires or direct interviews. This approach is used to see the relationship between one variable and other variables (Syapitri et al., 2021)

The population in the study were all stunted toddlers in Mander Village, Tambakboyo District, numbering 42 toddlers. The research sample is a portion taken from the entire object being studied and is considered to represent the entire population (Sri Rochani Mulyani, 2021) The samples in this study were all 42 stunted toddlers who attended the toddler posyandu in Mander Village, Tambakboyo District, Tambakboyo District using Total Sampling and in accordance with the inclusion and exclusion criteria set by the researcher.

3. RESULTS AND DISCUSSION

Sanitation for Toddler Families

The requirements for a healthy house include 3 components, namely house components (must have house components such as clean ceilings and not prone to accidents, permanent and watertight walls, plastered or tile or ceramic or board floors (stilt houses), bedroom windows opened every morning, family room windows opened every morning, ventilation holes >10% of the floor area, kitchen smoke holes >10% of the kitchen floor area (smoke comes out perfectly) or there is an exhaust fan, bright lighting and no glare), have sanitation facilities that meet the requirements (water facilities clean and not polluted, gooseneck latrines with septic tanks, waste disposal facilities watertight and closed), and maintaining the cleanliness of the living environment by implementing healthy hygiene behavior in the living environment, oneself (Kemenkes RI, 2020)

Table 1. Distribution of sanitation among respondents in Mander Village, Tambakboyo District, Tuban Regency

No.	Sanitation	*f*	Percentage %
	Unhealthy house	28	66,7
	Healthy house	14	33,3
	Total	42	100

Based on the data above, it shows that the state of house sanitation in the community in Mander Village, Tambakboyo District, Tuban Regency is still considered unhealthy. Unsanitary sanitation is often seen, especially in sanitation facilities, as many communities do not have healthy toilet facilities. Apart from that, the behavior of many household residents that still looks unhealthy is the behavior of throwing rubbish out of place. The habit of throwing rubbish in the river or in the area around the house is also often found, this has the potential to cause various infectious diseases. So toddlers often experience illness, especially diarrhea, which results in weight loss and causes the toddler to become stunted if the weight loss continues.(Ashar, 2020)

Incidence of Stunting in Toddler

Stunting is a condition of failure to thrive in children under five resulting from chronic malnutrition so that the child is too short for his age. In accordance with the stunting indicators according to the Ministry of Health of the Republic of Indonesia, stunting is a child under five with a z-score value of less than -2sd/standard deviation (stunted) and less than -3sd (severely stunted (TNP2K, 2017) Meanwhile, according to Lubis (2022) states that stunting children are not only measured based on their

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height, but are also accompanied by accompanying symptoms, namely intelligence barriers, for example: children are not interested in objects around them at the age of 1 year, their words are still not understandable at that age. 2 years old, cannot recognize his body at the age of 3 years, cannot draw lines and cannot distinguish colors at the age of 4 years and does not know numbers at the age of 5 years (Lubis, 2022).

In this research, to determine stunting in children, indicators are still used according to the Ministry of Health of the Republic of Indonesia in 2017, namely children under five with a z-score value of less than -2sd/standard deviation (stunted) and less than -3sd (severely stunted). Stunting indicators based on height (z-score value < standard) and followed by accompanying symptoms, namely intelligence barriers, cannot yet be carried out because this theory has not been proven empirically.

Table 1. Distribution of stunting incidents among respondents in Mander Village, Tambakboyo District, Tuban Regency

No.	Stunting incident	*f*	Percentage %
1.	Stunted	34	81
2.	Severely stunted	8	19
	Total	42	100

Based on the data above, it shows that stunting in toddlers in Mander Village, Tambakboyo District, Tuban Regency can be caused by maternal education and employment. In this research, it was discovered that the majority of mothers of toddlers with junior high school education (62%) were at the basic education level so that the low level of maternal education would certainly have an influence on the mother's behavior in caring for children, especially regarding fulfilling balanced nutritional intake for toddlers. If mothers do not know how to meet the needs of balanced nutritious food for toddlers, the toddler's growth process can be disrupted, resulting in stunting.

Maternal employment factors can also influence the occurrence of stunting in toddlers (54.8%). According to researchers, as parents who work as farmers, their time is spent working in the fields, so they don't get enough information regarding stunting in toddlers. Lack of information means that parents do not understand what factors can increase the risk of stunting in toddlers. This is in accordance with the theory which states that parenting behavior for toddlers, especially regarding fulfilling a balanced nutritional intake, can be the main cause of stunting. Nutritional intake for toddlers plays a very important role in the growth process of toddlers, because food contains lots of nutrients. Nutrition is a very important part of growth. Nutrition is closely related to health and intelligence.

If there is a nutritional deficiency, the child will easily get infections. If the nutritional intake of toddlers is not met properly, then the toddler's growth will also be disrupted, the body will be thin, malnourished and stunting can even occur, so good parenting patterns for mothers in feeding toddlers also need to be developed to avoid stunting. in toddlers (Aryu Chandra, 2020).

Correlation Analysis between Sanitation and Stunting Incidents in Toddlers

Table 3 Results of cross tabulation and statistical tests of the relationship between environmental sanitation and the incidence of stunting in Mander Village, Tambakboyo District, Tuban Regency

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No	Sanitation	Stunting Incidence: Stunted *f*	Stunted %	Severely stunted *f*	Severely stunted %	Total *f*	Total %	ρ *value*	R
1.	Unhealthy house	5	17,8	23	82,1	28	100		
2.	Healthy house	3	21,4	11	78,5	14	100	0,001	0,725
	Total	8	19	34	81	42	100		

Based on the results of the cross tabulation and statistical tests above, the results obtained from the 42 respondents studied were that of the 28 respondents with unhealthy home environmental sanitation, the majority of those with toddlers experienced stunting in the short category, namely 23 respondents (82.1%). Meanwhile, 14 respondents with healthy home environmental sanitation, almost all of them with toddlers experienced stunting in the short category, namely 11 respondents (78.6%). Then, from the results of the Rank Spearman statistical test, the value ρ value (0.001) < α (0.05) is obtained, so H1 is accepted, which means that there is a relationship between sanitation and the incidence of stunting in Mander Village, Tambakboyo District, Tuban Regency in 2023. Meanwhile, the correlation coefficient r is equal to 0.725, which means that the relationship between environmental sanitation and the incidence of stunting in toddlers is almost half that.

Unhealthy home sanitation will increase the risk of children suffering from stunting to a greater extent than children from families with healthy home sanitation. As an effort to prevent and overcome stunting incidents, namely by increasing the frequency of health education in the community regarding the factors that cause stunting, such as sanitation factors. Health workers can provide education related to the health of the family environment in order to increase knowledge about maintaining and creating a healthy family environment through health education or promotion related to material on the requirements for a healthy home, sanitation facilities and infrastructure that meet the requirements and the implementation of cleanliness behavior in the residence, oneself , and in caring for toddlers clearly and relevantly or through media such as booklets, posters or flip sheets containing educational information related to sanitation.

The results of this research are in accordance with the theory put forward by Notoatmodjo (2019), which states that environmental sanitation is the health status of an environment which includes housing, sewage disposal, provision of clean water and so on. Poor environmental sanitation can cause various health problems or diseases related to environmental health, including ISPA, pulmonary tuberculosis, diarrhea, dengue hemorrhagic fever (DHF), malaria and typhoid fever.

The results of the research show that there is a relationship between environmental sanitation and the incidence of stunting in toddlers, where the proportion of stunting incidents in the very short category appears to occur more frequently in families with unhealthy home environmental sanitation. According to researchers' assumptions, environmental sanitation is a factor that can indirectly influence the incidence of stunting in toddlers. Poor sanitation can invite the emergence of infectious diseases in toddlers such as diarrhea, worms, ARI, pulmonary tuberculosis, dengue hemorrhagic fever (DHF), malaria, and typhoid fever which can disrupt the fulfillment of balanced nutritional intake in toddlers so that

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some of the infectious diseases suffered can cause nutritional disorders in toddlers. If this condition occurs for a long time it can result in stunting problems. With the MMD {Village Community Consultation) the village midwife can propose the existence of healthy latrines or the need for latrines for the residents by the residents

4. CONCLUSION

From the results of research carried out in Mander Village, Tambakboyo District, Tuban Regency in March 2024, several conclusions can be drawn as follows:

1. Most of the sanitation of the home environment in families with children under five in Mander Village, Tambakboyo District, Tuban Regency is unhealthy.
2. Most of the toddlers in Mander Village, Tambakboyo District, Tuban Regency will experience stunting in the short category.
3. There is a significant relationship between environmental sanitation and the incidence of stunting among toddlers in Mander Village, Tambakboyo District, Tuban Regency

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6. REFERENCES

Aryu Chandra. (2020). STUNTING EPIDEMIOLOGY (1st ed.). Faculty of Medicine, Diponegoro University.

Ashar, Y. K. (2020). BASIC TEACHING MATERIALS FOR ENVIRONMENTAL HEALTH (1st ed.).

East Java Provincial Health Service. (2022). 2022 Health Department Performance Report.

Indonesian Ministry of Health. (2020). GUIDELINES FOR THE PREVENTION AND MANAGEMENT OF BAD NUTRITION IN TODDLERS (1st ed.). In-Published Catalog. Indonesian Ministry of Health.

Indonesian Ministry of Health. (2020). INDONESIAN HEALTH PROFILE 2020 (1st ed.). In-Published Catalog. Indonesian Ministry of Health.

Lubis, S. Z. (2022). Determinants of stunting incidents at the Alue Bilie Community Health Center, Nagan Raya Regency. SAGO Journal of Nutrition and Health, 3(1), 74. https://doi.org/10.30867/gikes.v3i1.721

Sri Rochani Mulyani. (2021). Research methodology (1st ed.). Widina Bhakti Persada.

Syapitri, H., Amila, & Aritonang, J. (2021). Textbook of Health Research Methodology (A. H. Naadana, Ed.; 1st ed.). Ahlimedia Press. www.ahlimediapress.com

Indonesiabaik.id Team. (2022). TOGETHER TO FIGHT STUNTING (Edy Pang, Ed.; 1st ed., Vol. 1). Directorate of Media Management.

TNP2K. (2017). Priority Districts/Cities for Intervention for Stunted Children VOLUME 1.

Wiyono, S., Burhani, A., Harjatmo, T. P., Astuti, T., Zulfianto, N. A., . T., & Putri, M. S. (2018). The role of

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sanitation to stunting children aged 6-35 months, Purwojati subdistrict, Banyumas district, Central Java, Indonesia. International Journal Of Community Medicine And Public Health, 6(1), 82. https://doi.org/10.18203/2394-6040.ijcmph20185231

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