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The Relationship between Clean Water Facilities, Building Conditions, and Toilet Ownership with Events Stunting among Months Toddlers in The Working Area of The Taktakan Public Health Center

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Abstract:
Stunting is a growth and development disorder experienced by children due to poor nutrition, recurrent infections, and inadequate psychosocial stimulation. Research purposes This is analyzing and knowing the relationship between clean water facilities and conditions building and ownership of toilets with the occurrence of stunting in toddlers aged 6-59 years month in the working area of the Taktakan Community Health Center, Serang City in 2023. Design This research is an analytical observational study with a research plan Cross section. The sample in this study was 62 toddlers aged 6-59 months. Primary data collection uses questionnaires with direct interviews, Secondary data was obtained from data on toddlers at the Taktakan Community Health Center, Serang City 2023. The results of the univariable analysis show that most of the toddlers are in the category very short at 24.2%, most of the clean water facilities are in the good categoryamounted to 67.7%, and latrine ownership in the good category amounted to 91.9%. Results of bivariable analysis stated that there was a significant relationship between the means clean water (p=0.000), building condition (p=0.000), and latrine ownership (p=0.010) with the incidence of stunting in the Taktakan Community Health Center working area, Serang City in 2023. Suggestions are given to improve supervision as well give more attention to pregnant women and babies about the importance of adequate nutrition and living environment.

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INTRODUCTION

Nutritional problems are among the many health problems that exist in society. One example of this nutritional problem is malnutrition, where malnutrition itself is the cause of the death of 2.6 million babies in the world every year (Paramasatya & Wulandari, 2023). Stunting is a growth and development disorder experienced by children due to poor nutrition, repeated infections, and inadequate psychosocial stimulation (Ardiana et al., 2019; Purwanti et al., 2022). Stunting is a failure to thrive in children under five due to chronic malnutrition in the first thousand days of life, starting from pregnancy until the child is two years old (Ruaida, 2018; Ardiana et al., 2021). This condition is characterized by a height below the normal growth standards for children of that age. Stunting impacts not only physical aspects but also affects cognitive development and long-term health, which has implications for productivity and the quality of human resources in the future (Yusran et al., 2023; Ardiana et al., 2021).

In Indonesia, stunting is still a significant public health problem. Data from the Ministry of Health of the Republic of Indonesia shows that the prevalence of stunting among children under

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five is still at an alarming rate, even though various intervention efforts have been made. The causes of stunting are multifactorial, including poor nutrition, repeated infections, inadequate feeding practices, poor sanitation and access to clean water, and low socio-economic conditions (Asri et al., 2019). The number of children under five with stunting cases is still high, with the prevalence of stunting reaching 21.6% in each province, where the highest number is in East Nusa Tenggara Province, namely 35.3%, based on the results of the Indonesian Nutrition Status Study (SSGI) of the Ministry of Health of the Republic of Indonesia in 2022, it was found that the prevalence of stunting in toddlers was 21.6%. This indicates that almost a quarter of toddlers in Indonesia will suffer from stunting in 2022. However, this percentage has decreased by 2.8 points compared to 2021, where the prevalence of toddlers suffering from stunting is 24.4% (Ringgi et al., 2022) .

Banten Province is one of the 12 priority provinces in Indonesia that needs attention because it still has high cases of stunting. However, in 2022, Banten Province can reduce the incidence of stunting to 20% from the previous figure 2021 of 24.5%. The prevalence of cases of KEP toddlers in 2014 in Serang City was 1.9% and fell to 1.57% in 2015, but if we look at the percentage of results for each sub-district in Serang City, Taktakan District is at the top with the highest number of KEP toddlers. Of the average number of babies under five suffering from PEM in Serang City, namely 712 children, 217 children (30.47%) babies under five suffering from PEM come from the Taktakan sub-district (Nursofiati et al., 2023). This percentage is the highest value compared to other sub-districts in Serang City, so it needs serious attention.

Research on the incidence of stunting is very important to understand the various factors contributing to this problem and formulate effective intervention strategies. This research aims to identify the main risk factors for stunting in various regions of Indonesia, evaluate the effectiveness of existing intervention programs, and develop a more comprehensive and integrated intervention model. Through this research, it is hoped that more targeted policy recommendations can be obtained in efforts to reduce the prevalence of stunting in Indonesia so that they can support the achievement of sustainable development targets (Sustainable Development Goals), especially goal number 2, namely ending hunger and all forms of malnutrition by 2030. By understanding the complexity of the causes of stunting and the interventions carried out, this research also aims to contribute to scientific literature and become a reference for researchers and health practitioners in efforts to deal with stunting globally.

METHOD

This research was conducted in December 2023-February 2024 and was conducted on 62 toddlers in the Taktakan Community Health Center working area. This location was chosen because, according to data from the Serang City Health Service in 2016, it was stated that (30.47%) of toddlers in the Taktakan Community Health Center area suffered from PEM. This research uses quantitative methods with a cross-sectional approach, namely research that studies the dynamics of the correlation between risk factors and effects by approaching, observing, or collecting data at one time (point time approach).

RESULT

Table 1. Frequency Distribution of Events Stunting, Clean Water Facilities, Building Conditions, Toilet Ownership in the Taktakan Work Area of Serang City in 2023

Variable	Frequency	Percentage (%)
Incident of Stunting		
Very short	15	24.2
Short	9	14.5
Normal	38	61.3
Clean Water Facilities		
Not good	20	32.3
Good	42	67.7
Building Condition		
Not good	22	35.5
Good	40	64.5
Toilet Ownership		
Not good	5	8.1
Good	57	91.9

*Source: Primary Data, 2023

Based on Table 1, it is known that of the 62 respondents, there were 38 (61.3%) toddlers in the normal category, 9 (14.5%) toddlers in the short category, and 15 (24.2%) toddlers in the very short category. Most respondents had good clean water facilities, 42 (67.7%) and 20 (32.3%) had poor clean water facilities. Most respondents had good building conditions, 40 (64.5%) and 22 (35.5%) had good building conditions. Almost all respondents had good latrines, 57 (91.9%) and 5 (8.1%) had poor latrines.

Table 2. Relationship between Clean Water Facilities, Building Conditions, and Toilet Ownership with Stunting Incidents in the Taktakan Community Health Center Working Area, Serang City in 2023

Variable	Stunting Events				p-value
	Short		Normal		
	n	%	n	%	
Clean Water Facilities					
Not good	14	70.7	6	29.3	0.001
Good	10	23.8	32	76.2	
Building Condition					
Not good	14	63.6	8	36.4	0.003
Good	10	25.0	30	75.0	
Toilet Ownership					
Not good	4	80.0	1	20.0	0.009
Good	20	35.1	37	64.9	

*Source: Primary Data, 2023

It can be seen that of the 20 respondents who have poor clean water facilities, 14 (70.7%) toddlers are in the short category, and 10 (25.0%) are in the normal category. Meanwhile, of the 40 respondents with good clean water facilities, 8 (36.4%) toddlers are in the normal category, and 30 (24.5%) are in the normal category. Results of bivariable analysis using Test Spend Square obtained a p-value of 0.003 ($p<\alpha$), meaning that statistically, at α 5%, there is a significant relationship between clean water facilities and the incidence of stunting in toddlers in the working area of the Taktakan Health Center, Serang City in 2023.

Of the 22 respondents who had poor building conditions, there were 14 (63.6%) toddlers in the very short category, 2 (9.1%) toddlers in the short category and 8 (36.4%) toddlers in the short

category. normal. Meanwhile, of the 40 respondents who had good building conditions, there were 3 (7.5%) toddlers in the very short category, 7 (17.5%) toddlers in the short category, and 30 (75.0%) toddlers in the short category. normal. Results of bivariable analysis using Test Spend Square obtained a p-value of 0.000 (p<α), meaning that statistically, at α 5%, there is a significant relationship between building conditions and the incidence of stunting in toddlers in the working area of the Taktakan Health Center, Serang City in 2023.

It is known that of the 5 respondents who had poor toilets, there were 4 (80.0%) toddlers in the short category, and 1 (20.0%) toddler in the normal category. Meanwhile, of the 57 respondents who had good toilets, there were 20 (35.1%) toddlers in the short category, 9 (15.8%) toddlers in the short category, and 37 (64.9%) toddlers in the normal category. Results of bivariable analysis using Test Spend Square obtained a p-value of 0.000 (p<α), meaning that statistically, at α 5%, there is a significant relationship between latrine ownership and the incidence of stunting in toddlers in the working area of the Taktakan Health Center, Serang City in 2023.

DISCUSSION

The research results in the field showed that some respondents had a suitable source of clean water. Still, it was unsuitable for the other respondents (the distance from the water source to the waste disposal site was 10 meters for person A, but the opposite was true for person B). Most of their water sources come from dug wells and drilled wells. Inadequate sanitation has a significant relationship with stunting, so children with inadequate sanitation conditions have a 5.0 times greater risk of stunting (Zairinayati & Purnama, 2019). Access to proper sanitation can protect toddlers against stunting. Clean and adequate drinking water, proper sanitation, channels for wastewater, and appropriate solid waste management are the main health equity interventions (Wardita et al., 2023).

Statistical test results using Chi-Square If the value of P = 0.001 is obtained, it can be concluded statistically that at α = 5%, there is a significant relationship between clean water facilities and the incidence of stunting in toddlers in the Taktakan Health Center working area in 2023. This is in line with other research, which states a significant relationship exists between sanitation provision of clean water and the incidence of stunting (p=0.047, OR=2.705) (Nisa et al., 2021).

Poor home sanitation is one of the factors related to incidents of stunting in toddlers in Indonesia (Olo et al., 2021). House sanitation related to the stunting of the incident includes the condition of ceilings, floors of clean water facilities, and latrines. Bad environmental conditions will cause many germs in the environment and a person's immune system, especially children, to decrease, which causes the occurrence of stunting (Rosha et al., 2020).

Statistical test results using Chi-Square If the value obtained is P=0.003, it can be concluded statistically that at α=5%, there is a significant relationship between the condition of the building and the incidence of stunting. The result is OR=5.250, meaning that toddlers with poor housing conditions have a 5.2 times greater risk of experiencing stunting compared to those with good housing conditions. This is in line with other research that states a significant relationship exists between home sanitation and the incidence of stunting (p=0058, OR=8.83) (Arring & Winarti, 2024).

One of the sanitation facilities that affects health status is a latrine, which is one of the basic human needs (Annisa & Susilawati, 2022). Building latrines is one of humans' efforts to maintain health by creating a clean and healthy living environment. Latrines are very effective in breaking the chain of transmission of disease; healthy latrines must be built, owned, and used by the family

with placement (inside the house or outside the house) that is easily accessible to the occupants of the house (Umbulharjo, 2020; Kurniyawan et al., 2023). Although sanitation and using healthy toilets should be the basic foundations of a healthy household, not all households consider this important (Simanihuruk et al., 2023).

Based on the results of statistical tests using Chi-Square obtained a value of P=0.009, it is concluded statistically at α=5%, there is a significant relationship between latrine ownership and the incidence of stunting, and the OR=7.400 result means that toddlers who don't have a toilet are 7.4 times more at risk of experiencing it stunting compared to toddlers who have toilets. This is confirmed by research by Illahi et al. (2022), which states a significant relationship between latrine ownership and the incidence of stunting (p=0.001, OR=7.4).

CONCLUSION

There was a significant relationship between the means of clean water (p=0.000), building condition (p=0.000), and latrine ownership (p=0.010) with the incidence of stunting in the Taktakan Community Health Center working area, Serang City in 2023. Suggestions are given to improve supervision and give more attention to pregnant women and babies about the importance of adequate nutrition and living environment.

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