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Environmental Sanitation and PHBS Analysis of Stunting Incidents in Toddler in Paser District

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ABSTRACT

Background: Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, especially in the first 1,000 days of life (HPK). The direct causes of stunting in toddlers are a history of Low Birth Weight (LBW), food availability, household consumption patterns and infectious diseases in toddlers.

Objective: The aim of this research is to analyze environmental sanitation and PHBS on the incidence of stunting in Paser Regency.

Research Method: Correlative analytical research type, with a case control approach with a case population of 4,665 toddlers in 21 villages/subdistricts and for the sample using 1:1, that means a sample of 62 cases and 62 controls.

Results: The results of this research are the variable ownership of healthy toilets, p-value 0.005 and OR=3.054, 95%CI 1.388-6.716), water quality (p-value 0.017 and OR=2.298, 95%CI 1.158-4.564), PHBS behavior (p-value 0.04 and OR=2.020, 95%CI 1.025-3.978) and SBABS variables (p-value 0.002 and OR=2.911, 95%CI 1.458-5.811)

Conclusion: So it can be concluded that there is a significant relationship between latrine ownership, water quality, PHBS and SBABS behavior and the incidence of stunting in Paser Regency

Keywords: Stunting; PHBS; Environment, Stop Open Defecation

INTRODUCTION

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, especially in the First 1,000 Days of Life (HPK), which is the Golden Period. Strong nutrition, especially in critical periods, can help improve children's nutritional problems in the future. There are many nutritional problems in Indonesia, especially nutritional problems in children aged 2-5 years which will have an impact on the quality of human resources (HR). One of the problems that is attracting attention is the problem of short children or stunting (1).

The problem of malnutrition in Indonesia is a health problem that the government has not been able to fully overcome. This is proven by data from the 2022 Indonesian nutritional status survey (SSGI) which provides an overview of the nutritional status of toddlers. According to SSGI data for 2022 using a sample size of 334,848 toddlers by collecting data from 486 districts/cities in 33 provinces in Indonesia, it was found that stunting in toddlers was 30.8% in 2018, 27.7% in 2019, 24% in 2021. .4% and in 2022 it will decrease by 21.6% (1).

Based on data from the East Kalimantan Health Service, it is stated that stunting in children in East Kalimantan increases every year. Of the 10 districts/cities in East Kalimantan, the highest stunting cases are currently in Bontang City (32.4%), the second highest is East Kutai Regency (32.2%), the third position is North Penajam Paser Regency (31.9%), North Kalimantan Regency Paser is in fourth place with the stunting rate in 2019 being 31.8 percent. Based on data from the Indonesian Nutrition Status Survey (SSGI) in 2021, the stunting rate in Paser Regency was 23.8 percent, while in 2022, the prevalence of stunting cases increased to 24.9 percent or an increase of 1.1 percent2 and Paser Regency was ranked third highest. from 10 regencies/cities with 2,751 cases (15.78%) in East Kalimantan.

In implementing the policy of accelerating the reduction and prevention of stunting in the region, the Paser District Health Service is trying to implement it optimally. The average number of posyandu in Paser District carrying out main activities has not yet reached 80%. Apart from that, human resources in the health sector (health workers) are still inadequate, meaning that health services are not optimal, the number of doctors and midwives on duty at community health centers is not evenly distributed in each sub-district/village. This means that the implementation of stunting prevention policies by the Health Service in Paser Regency is still not optimal. Lack of coordination between agencies is also one of the problems in implementing stunting reduction policies (3).

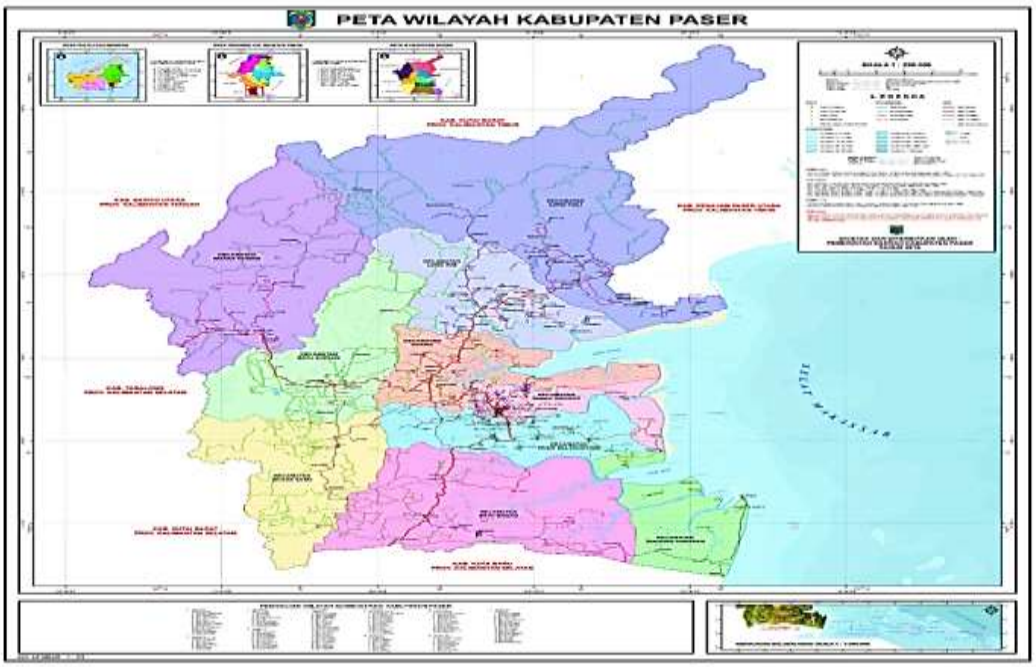
The incidence of stunting in toddlers is caused by several direct and indirect factors. Factors that directly cause stunting in toddlers are a history of Low Birth Weight (LBW), food availability, household consumption patterns and infectious diseases in toddlers (4).

METHOD

This research has received ethical approval from Diponegoro University number: 177/EA/KEPK-FKM/2024. The type of research is correlative analytics, namely a method that explains a situation and looks at cause and effect relationships. With a case control approach with a case population of 4,665 toddlers in 21 villages/subdistricts and for samples using 1:1, that means a sample of 62 cases and 62 controls. The sampling technique in this research was purposive sampling.

RESULTS

Administratively, Paser Regency consists of 10 sub-districts which are divided into 139 villages and 5 sub-districts. According to data from the Paser Regency Central Statistics Agency, the population of Paser Regency in 2019 was 285,894 people, in 2020 it was 275,452 people, in 2021 it was 277,602 people, in 2022 it was 280,065 people and in 2023 it was 303,424 people, consisting of 156,903 men. and women 146,521 people.



Gambar 1. Peta Adminitrasi Kabupaten Paser

Based on table 1, it can be seen that the variable for ownership of a healthy toilet in the case group that meets the requirements is 60.9%, while the control group that meets the requirements is 82.6%. In the water quality variable for the case group, water quality that did not meet the requirements was 65.2%, while for the control group, 45% did not meet the requirements. Furthermore, the PHBS variable of respondents in the case group who behaved badly was 58%, in the control group 40.6% and then in the SBABS behavior variable for the case group there were 36.2% who behaved well while in the control group 62.3% behaved well.

Table 1. Distribusi Respondent

Variabel	Case		Control	
	N	%	N	%
a. Healthy Toilet Ownership				
Does not meet the requirements	27	39,1	12	17,4
Fulfills the requirements	42	60,9	17	82,6
b. Water quality				
Does not meet the requirements	45	65,2	31	45
Fulfills the requirements	24	34,8	38	55
c. PHBS (clean and healthy living behavior)				
Not behaving well	40	58	28	40,6
Well behaved	29	42	41	59,4
d. Stop Open Defecation				
Not behaving well	44	63,8	26	37,7
Well behaved	25	36,2	43	62,3

Table 2. Risk Factors for Stunting

No	Risk Factors	*p*	OR	95%CI
1.	Healthy Toilet Ownership	0,005	3,054	1.388-6,716
2.	Water quality	0,017	2,298	1.158-4,564
3.	PHBS (clean and healthy living behavior)	0,04	2,020	1,025-3.978
4.	Stop Open Defecation	0,002	2,911	1,458-5,811

DISCUSSION

A healthy latrine is one that meets health requirements and is able to prevent the direct spread of human waste and prevent disease-carrying vectors in latrine users and the surrounding environment. Children who have poor environmental sanitation will be at risk of experiencing stunting compared to children who have adequate and good environmental sanitation in medium plain and mountain ecosystems. Building healthy latrines requires quite high

costs, causing people to not have septic tanks, so people prefer to dispose of waste from latrines into nearby rivers and do not repair or change latrine construction in accordance with the requirements for latrine buildings as regulated in Minister of Health Regulation Number 3 of the Year. 2014 concerning Community Based Sanitation (5).

Based on the research results in Tables 1 and 2, it shows that ownership of healthy latrines that meet the requirements in the control group is greater than in the case group, namely 82.6%. Based on the results of the Chi-Square test, it was found (p-value 0.005 and OR=3.054, 95%CI 1.388-6.716) which means there is a significant relationship with a risk factor of 3.054 between ownership of a healthy latrine and the incidence of stunting in Paser Regency.

This research is in line with that carried out6 in Murung Regency, the results of which showed that there was a significant relationship between latrine ownership and the incidence of stunting in toddlers aged 5-59 months (p=0.000 OR= 6.641 CI95% = 2.769–15.927. This can prove that latrine Poor sanitation conditions can make the environmental conditions at risk of stunting 6,641 times. Ownership of an inadequate toilet is at least 2,769 times more likely to cause stunting and at most is 15,927 times more likely to cause stunting from many factors factors that influence this include maternal factors, where education and work are influential, mothers who work will have a risk of stunting in toddlers 1.47 times compared to toddlers whose mothers do not work (7).

Based on direct observations in the field, there are still many people who do not have latrines and prefer to defecate in the river or even consider building a latrine or defecating in a latrine. Apart from that, the distance between the water source and the septic tank does not meet the requirements of less than 10m. The use of healthy latrines is closely related to access to hygiene. The Institute of Development Studies has conducted research on this matter and obtained data that access to clean water and better sanitation can influence child stunting levels. Lack of access to good sanitation can have an impact on diarrhea, due to inadequate waste disposal.

Water quality is very important for humans because it plays many roles in human life. Clean water is widely used for daily purposes such as drinking, cooking, washing, bathing, and so on. In fact, humans will die more quickly from lack of water than from lack of food. 22 Water that is physically, chemically and microbiologically polluted, if drunk or used for cooking, bathing and washing, can cause disease. Water that can be said to be clean water must fulfill 4 requirements, namely physical, chemical, biological and radioactive requirements in accordance with Decree (8).

The results of this research are found in Table 2. The Chi-Square test results were found (p-value 0.017 and OR=2.298, 95%CI 1.158-4.564). It can be concluded that there is a significant relationship with a risk factor of 2.298 between water quality and stunting events. The results of this research are in line with those carried out6 in Murung District. The analysis in this study shows that there is a significant relationship between water availability and the incidence of stunting (p= 0.000 OR= 62.667 CI95%= 16.127–243.516, namely the risk of using poor water facilities has the potential to affects the incidence of stunting by 62,667 times and the use of poor water facilities is at least 16,127 times more risky in causing stunting and is 243,516 times more risky in causing stunting.

Based on the results of observations that have been made, the majority of respondents in the control group have used water facilities well compared to the case group. The availability of clean water greatly influences the occurrence of stunting in toddlers because clean water is used in everyday life such as drinking, cooking, bathing and washing. Water is very easily contaminated with pathogenic bacteria if it is not managed well, such as not boiling it and the container used to store drinking water is not clean and does not have a lid. If consumed, this water can cause digestive system disorders such as diarrhea, typhoid, cholera, dysentery, and so on (9).

The availability of clean water greatly influences the occurrence of stunting in toddlers because clean water is used in everyday life such as drinking, cooking, bathing and washing. Water is very easily contaminated with pathogenic bacteria if it is not managed well, such as not boiling it until it boils and the container used to store drinking water is not clean and does not have a lid. If this water is consumed, it can cause digestive system disorders such as diarrhea, typhoid, cholera, dysentery and so on. 1 For toddlers who are in their growing period, if they consume this water repeatedly it can inhibit their growth and development, because the energy from food intake is diverted to fighting infection so that growth and toddler development is not optimal (10).

PHBS is essentially a preventative behavior by individuals or families from various diseases (11). Therefore, PHBS practice in daily life is very necessary because behavioral factors have 30-35% of the degree of health (12). Clean and healthy living behavior in the household is to empower household members to know, be willing and able to practice clean and healthy living behavior and play an active role in the health movement in the community (13).

Based on the results of the research that has been carried out, it can be seen in Tables 1 and 2 that it shows that there are more people who do not practice PHBS well in the case group than in the control group, namely 58%. Based on the results of the Chi-Square test, it was found (p-value 0.04 and OR=2.020, 95%CI 1.025-3.978) it can be concluded that there is a significant relationship with a risk factor of 2.020 between PHBS and the incidence of stunting.

The results of this research are in line with those carried out (14). in Surakarta there is a relationship between the implementation of PHBS and the incidence of stunting in Baduta, this is in line with the results of other research regarding indicators of clean and healthy living behavior in households by (15). The higher prevalence of stunted children whose parents smoke (33.7%) compared to those who do not smoking (16%) and there is a significant relationship between social and community risk factors such as exposure to cigarettes, ownership of unprotected toilets with water sources and the incidence of stunting in Central Sulawesi (16). Another behavior that contributes to stunting is the habit of washing hands with soap, research17 states There is a relationship between washing hands using clean, running water and the incidence of stunting in Banggai and Sigi districts and there is a relationship between the use of clean water and the habit of washing hands with soap and the incidence of stunting in toddlers 2-4 years old in Gorontalo district (18).

Sanitation together with environmental conditions and the availability of clean water is one of the important things in realizing the level of public health which has an impact on social and economic development. Improvements in sanitation, the environment and clean water will substantially reduce the level of morbidity and severity of various diseases so that it can improve the quality of life of people, especially children in developing countries (19). Improvements in these three components have an impact on reducing the level of death (mortality) due to disease, especially infectious diseases caused by environmental factors. A physical and biological environment that meets health requirements is measured by the availability of clean water, the availability of latrines, the availability of wastewater disposal channels, the condition of the house and the behavior of the house occupants (20).

In this case, the Ministry of Health has a Community-Based Total Sanitation (STBM) program with five pillars. One of the pillars is to stop open defecation (BABS). The results of research regarding defecation behavior around the Karang Mumus River, Samarinda show that the majority of people use latrines that do not meet health requirements. People still use floating latrines on the river. Apart from that, there are still people who have toilets in their homes, but the drains still run into rivers (21).

CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that there is a significant relationship between latrine ownership, water quality, PHBS and SBABS behavior and the incidence of stunting in Paser Regency.

SUGGESTION

It is recommended to all communities in Paser Regency to build healthy latrines that comply with Ministry of Health standards so as not to pollute the surrounding environment and maintain water quality, in addition to paying attention to the nutritional intake of pregnant women to prevent stunting in Paser Regency.

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