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Research Article

Environmental Sanitation and Stunting Among Toddlers In Indramayu : A Cross-Sectional Study

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ABSTRACT

Stunting is chronic malnutrition over a long period of time. One of the factors causing stunting in toddlers is environmental sanitation. Environmental sanitation is an effort to control all human physical environmental factors that may cause or may cause things that are detrimental to human physical development, health and survival. The aim of the study was to determine the relationship between environmental sanitation and stunting in toddlers in Indramayu. This research is quantitative research with cross-sectional study. The population in this study were mothers who had toddlers aged 12-59 months in the Lelea Health Center Service Area, Indramayu Regency. The sampling technique used was a purposive sampling of 46 respondents. The research instrument used a questionnaire and observation sheet, data analysis used univariate and bivariate analysis. The results of this study show that as many as 27 (58.7%) mothers had an unhealthy environment and as many as 28 (60.9%) toddlers were identified as having stunting. The results of the analysis showed that there was no relationship between environmental sanitation and stunting in Indramayu with a P-value = 0.566 (α = 0.05). The conclusion of this study is that there is no relationship between environmental sanitation and stunting in Indramayu.

INTRODUCTION

Stunting is a serious condition in toddlers who do not get the right amount of nutrition for a long time. Stunting caused by chronic nutritional deficiencies. A toddler is said to be stunted if the child's height or length is less than -2 standard deviations (SD) below the median value (Patimah, 2021).

Based on data from the World Health Organization (WHO, 2018), around 150.8 million (22.2%) children under the age of five in the world experience stunting. Asia has the highest prevalence of stunting in the world, which is around 55%. Stunting toddlers in Asia reached 83.6 million people with the highest prevalence in South Asia (58.7%) and the smallest prevalence in Central Asia (0.9%). The prevalence of stunting in Indonesia itself reached 24.4% (Kemenkes, 2022). and in 2023 it will drop to 21.6%. Although the prevalence of stunting in Indonesia has decreased, the incidence of stunting in West Java is 20.2% (Survei Status Gizi Indonesia (SSGI), 2022).

According to data from the Indramayu Health Service, the incidence of stunting reached 14.4%, with 903 toddlers in the very short category and 2,537 toddlers in the short category (Dinas Kesehatan Kabupaten Indramayu, 2023). The highest prevalence of stunting cases in Indramayu is in Lelea District with an incidence of 260 cases.

The impact of stunting on toddlers can not only be seen from their short bodies, but can also cause learning difficulties, have weak cognitive abilities, get tired easily, have a high risk of contracting infectious diseases, have a high risk of experiencing various chronic diseases, have low productivity, and in women who experience stunting can be at risk during pregnancy such as fetal death during childbirth (Imani, 2021).

According to (Sulistiani, 2023), several factors that cause stunting are divided into two, direct factors and indirect factors. Direct factors are maternal factors, genetics, food intake, exclusive breastfeeding and infection. While indirect factors are socio-economic factors, education level, maternal knowledge and environmental sanitation.

Nutritional problems are closely related to environmental factors. The environment is one of the indicators for assessing human health levels (Purnama, 2017). Environmental sanitation is an effort to control all factors of the human physical environment that may potentially cause things that are detrimental to physical development, health and human survival. In other words, environmental sanitation is the health status of an environment that includes clean water facilities, waste disposal facilities, toilet facilities and wastewater disposal facilities. Therefore, environmental sanitation aims to create and meet the requirements of a healthy and comfortable environment. Because, if an environment has poor sanitation, then it has the potential to be a source of transmission of various diseases (Adrian, 2021).

Poor sanitation can invite infectious diseases in toddlers such as diarrhea and worms that can interfere with the digestive tract in absorbing nutrients. Some infectious diseases suffered by babies can cause the baby's weight to drop. If this condition occurs for a long time, it can cause stunting problems. For that, clean and healthy living behavior is needed in toddlers (Rasni, dkk, 2019).

Based on interviews on January 15-21, 2024 at the Lelea Health Center, Indramayu Regency, with 10 mothers who have children aged 12-59 years, it was found that there were 6 toddlers who experienced stunting and 4 toddlers who did not experience stunting, 4 respondents used water facilities from the Regional Drinking Water Company (PDAM) and 6 respondents used water pump facilities. 2 people threw away garbage by burning it, 1 person threw garbage into the river and 7 people threw garbage into public waste disposal sites. There were 8 respondents who had toilets with a septic tank distance of <1 meter and there were 2 respondents who had toilets with a septic tank distance of >1 meter. There was 1 respondent who dumped wastewater into the rice fields, 1 respondent who dumped wastewater into the river and 8 respondents who dumped wastewater into the gutters.

Based on the background, the author is interested in researching "The relationship between environmental sanitation and the incidence of stunting in toddlers aged 12-59 months in the Lelea Health Center Service Area, Indramayu Regency".

METHOD

This research is quantitative research with a cross-sectional study. The population in this study were mothers who had toddlers aged 12-59 months in the Lelea Health Center Service Area, Indramayu Regency. The sampling technique used was a purposive sampling of 46 respondents.

The independent variable in this study is environmental sanitation and the dependent variable in this study is stunting.

The research instruments used in this study were questionnaires and microtoices to measure the height of toddlers. The data analysis used in this study was univariate and bivariate analysis in the form of frequency distribution and chi square test.

Research ethics in this study include : *Right to self determination, Right in fair treatment, Right to privacy on dignity, and Right to protection from discomfort and harm.*

RESULTS AND DISCUSSION

1. Respondent Characteristics

Table 1. Respondent Characteristics Based on Mother's Age

No	Age	f	(%)
1	21-30 Year	10	21.7
2	31-40 Year	31	67.4
3	41-50 Year	5	10.9
	Total	**46**	**100**

Table 2. Frequency Distribution of Respondents Based on Mother's Education Level, Mother's Occupation, and Child's Gender

No	Respondent Characteristics	f	(%)
1.	Mother's Education Level		
	Not Studying	2	4.3
	Elementary school	15	32.6
	Junior High School	19	41.3
	Senior High School	9	19.6
	Diploma	1	2.2
	Bachelor	0	0
	Total	**46**	**100.0**
2.	Mother's Occupation		
	Housewife	38	82.6
	Laborer	2	4.3
	Self-employed	4	8.7
	Farmer	2	4.3
	Total	**46**	**100.0**
4.	Child's Gender		
	Male	23	50.0
	Female	23	50.0
	Total	**46**	**100.0**

2. Overview of environmental sanitation

Tabel 3. Overview of environmental sanitation in the Lelea Health Center Working Area, Indramayu Regency.

Environmental Sanitation	f	(%)
Healthy Environment	19	41.3
Unhealthy Environment	27	58.7
Total	**46**	**100**

Based on table 3 above, it was obtained from 46 (100%) mothers, seen from environmental sanitation conditions, the highest percentage was an unhealthy environment, as many as 27 (58.7%) respondents.

3. Overview of stunting incidents in the Lelea Health Center Working Area, Indramayu Regency.

Table 4. Description of stunting incidents in the Lelea Health Center Working Area, Indramayu Regency

Stunting Incident	f	(%)
Stunting	28	60.9
Not *Stunting*	18	39.1
Jumlah	**46**	**100**

Based on table 3 above, it was found that out of 46 (100%) toddlers, 28 (60.9%) toddlers experienced stunting.

4. The Relationship between Environmental Sanitation and Stunting Incidence in Toddlers Aged 12-59 Months in the Working Area of Lelea Health Center, Indramayu Regency.

Table 5. Relationship between Environmental Sanitation and Stunting Incidence in Toddlers in Indramayu

Environmental Sanitation	*Stunting Incident*				Total	*P-value*
	Not Stunting		*Stunting*			
	F	%	F	%		
Healthy	6	31.6	13	68.4	19	
Unhealthy	12	44.4	15	55.6	27	0.566
Jumlah	**18**	**39.1**	**28**	**60.9**	**46**	

Based on table 3 above, it is known that the distribution of environmental sanitation frequency with stunting incidents has the highest percentage, namely unhealthy environments as many as 27 (58.7%) mothers with toddlers experiencing stunting as many as 15 toddlers and toddlers not stunted as many as 12 toddlers, it is known that as many as 19 (41.3%) mothers have a healthy environment that experiences stunting as many as 13 toddlers and toddlers not stunted as many as 6 toddlers. The results of statistical tests using the chi square test obtained a P-value = 0.566 (α = 0.05) so there is no relationship between environmental sanitation and stunting incidents in toddlers in Indramayu.

DISCUSSION

Stunting or dwarfism is a condition where a toddler has a length or height that is less than his age. This condition is measured by a length or height that is less than -2 standard deviations of the median of the child's growth standard (WHO, 2018). Other determinant factors that cause stunting are food factors such as energy, protein and zinc intake. Other causal factors can be caused by the child's age, diet, family income, mother's education, mother's knowledge, history of breastfeeding, birth weight, completeness of immunization and mother's parenting patterns (Hardinsyah & Supariasa, 2018).

The impact of stunting on toddlers can not only be seen from their short bodies, but can also cause learning difficulties, have weak cognitive abilities, get tired easily, have a high risk of contracting infectious diseases, have a high risk of experiencing various chronic diseases, have low productivity, and in women who experience stunting can be at risk during pregnancy such as fetal death during childbirth (Imani, 2021).

According to (Sulistiani, 2023) several factors causing stunting are divided into two, direct factors and indirect factors. Direct factors are maternal factors, genetics, food intake, exclusive breastfeeding and infection. While indirect factors are socio-economic factors, education level, maternal knowledge and environmental sanitation. Other factors that can cause stunting are divided into three causal factors, namely prenatal risk factors which include parental height, past nutrition, and birth weight. Risk factors during pregnancy (antenatal) which include nutrition during pregnancy and programming and postnatal risk factors which include nutritional factors such as breast milk/lactation, disease factors, disease factors and family factors (Prawirohartono, 2021).

Environmental sanitation is an effort to control all factors of the human physical environment that may potentially cause things that are detrimental to physical development, health and human survival. In other words, environmental sanitation is the health status of an environment that includes housing, waste disposal, provision of clean water, and others. Therefore, environmental sanitation aims to create and meet the requirements of a healthy and comfortable environment. Because, if an environment has poor sanitation, then it has the potential to be a source of transmission of various diseases (Adrian, 2021)

Nutritional problems are closely related to environmental factors. The environment is one of the indicators for assessing the degree of human health (Purnama, 2017). Poor sanitation can invite infectious diseases in toddlers such as diarrhea and worms that can interfere with the digestive tract in absorbing nutrients. Some infectious diseases suffered by babies can cause the baby's weight to drop. If this condition occurs for a long time, it can cause stunting problems.

Based on the results of the study in the Lelea Health Center Working Area, it was stated that there was no significant relationship between environmental sanitation and the incidence of stunting in toddlers. The results of the statistical test using the chi square test obtained a p-value = 0.566 (α = 0.05) so it can be concluded that Ha is rejected, meaning that there is no relationship between

environmental sanitation and stunting in toddlers in Indramayu. The absence of a relationship between environmental sanitation and the stunting is likely due to other factors that are more dominant in causing stunting, such as exclusive breastfeeding status, maternal nutritional status and maternal education level (Komalasari, dkk, 2020).

This research is in accordance with the results of previous research by Zalukhu, A. Mariyona, K. & Andriani, (2022)the relationship between environmental sanitation and the incidence of stunting in toddlers aged 0-59 months, a p-value of 0.128 was obtained, which means that there is no significant relationship between environmental sanitation and the incidence of stunting in toddlers aged 0-59 months in Balingka Village.

CONCLUSIONS AND RECOMMENDATION

1. Conclusions

   The conclusion of this study is:

   a. Environmental sanitation as many as 27 (58.7%) respondents have an unhealthy environment.
   b. The incidence of stunting in toddlers aged 12-59 months as many as 28 (60.9%) toddlers experience stunting.
   c. There is no significant relationship between environmental sanitation and stunting in toddlers in Indramayu with a p-value = 0.566 (α = 0.05).

2. Recommendation

   a. For health services, it can focus on routine counseling regarding child growth and development, especially TB/U in toddlers.
   b. For further research, maternal education, exclusive breastfeeding, and nutritional intake should be controlled to better understand the determining factors of stunting

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