The Relationship Between Environmental Sanitation and the Incidence of Diarrhea in the Working Area of Puskesmas Sentosa Baru

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Article Info	ABSTRACT
	In 2021, there was an increase in the incidence of diarrhea by 1,225 patients, starting from early January to December 2021. This study aims to determine the relationship between Environmental Sanitation and the incidence of diarrhea in the Puskesmas work area. This study used the cross-sectional method. The population of this study is people who live in the working area of Sentosa Baru Health Center. Sample selection using the Lameshow 1997 formula so that 96 samples were obtained. Statistical tests using chi-square with the help of computer software. The research site in the working area of Sentosa Baru Health Center was carried out in May-August 2022. Based on environmental sanitation, respondents who met the requirements for healthy latrines (16.7%) and did not meet the requirements (83.3%), good Clean Water Supply Facilities (11.5%) and poor Water Supply (88.5%), good Garbage Can Facilities (7.3%) and poor Garbage Can Facilities (92.7%), while Wastewater Management Facilities that met the requirements were as many (19.8%) and did not meet the requirements as much (80.2%). Research shows that there is a relationship between Environmental Sanitation including Healthy Latrines Provision Facilities (p-value = 0.00), there is a relationship between Clean Water Facilities and diarrhea events (p-value = 0.010), there is no relationship between Garbage Can Facilities and diarrhea events (p-value = 0.070), and there is a relationship between Wastewater Management Facilities and diarrhea events (p-value = 0.015).

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INTRODUCTION

Diarrheal disease still ranks second cause of death in children under five years old. In Indonesia based on health reports from UNICEF and the World Health Organization (WHO) in 2009, number mortality rate For diarrhea in children under the age of 5 years reached 41 per 1000 live births and the death rate reached 173 per 1000 population (Rahmawati et al., 2020).

Based on the report of the North Sumatra Provincial Health Office, diarrhea is an endemic disease in Indonesia and is also a potential outbreak disease that is often accompanied by death. The number of diarrhea sufferers of All Ages (SU) served was 177,438 people or 45.13%. While the number of diarrhea sufferers in toddlers served was 70,243 people or 27.74%.

Based on data from the Sentosa Baru Health Center in 2020, shows that the number of diarrhea sufferers was 948 patients from early January to December 2020 (Sentosa Baru Health Center, 2020). In 2021, there was

an increase in the incidence of diarrhea by 1,225 patients, starting from early January to December 2021. Many factors directly or indirectly drive the emergence of diarrhea in an area such as agent, host, environmental, and behavioral factors.

From the results of observations made in the field, it was found that there are still many people who lack clean and healthy behavior. This can be seen from the number of households in the Puskesmas work area, namely from 27,273 families, only 2,552 families carry out clean and healthy living behaviors (Sentosa Baru Health Center, 2020).

METHOD

This research is research with a quantitative descriptive approach to the relationship between environmental sanitation and the incidence of diarrhea in the Sentosa Baru Health Center Working Area. This research design is cross-sectional, namely research that is carried out data collection at one time. The place of this research was conducted in the working area of Sentosa Baru Health Center, Medan Perjuangan District.

The population in this study is people who live in the working area of Sentosa Baru Health Center, Medan Perjuangan District, where the population is obtained from secondary data from Sentosa Baru Health Center, Medan Perjuangan District. The number of samples in this study was determined using a formula (Lameshow, 1997). The samples used in this study were 96 samples.

Data collection techniques in this study are using primary data where data is obtained from surveys to locations and conducting direct interviews with respondents using questionnaire sheets and documentation.

This study also used validity tests and Reliability Tests. The analysis used in this study is univariate analysis and Bivariate Analysis.

DISCUSSION

Based on the results of the study, data on the characteristics of respondents were obtained as follows:
a. Age

Respondents aged 16-21 years amounted to 16 people with a percentage (16.7%), respondents aged 22-27 years amounted to 23 people with a percentage (24.0%), respondents aged 28-33 years amounted to 25 people with a percentage (26.0%), respondents aged 34-39 years amounted to 12 people with a percentage (12.5%), respondents aged 40-45 years amounted to 6 people with a percentage (6.3%), respondents aged 46-51 years amounted to 8 people with a percentage (8.3%), Respondents aged 52-57 years amounted to 6 with a percentage (6.3%).

b. Jenis Kelamin

Male respondents amounted to 37 people with a percentage of 38.5%, and respondents with female gender amounted to 59 people with a percentage of 61.5%.

c. Education

Respondents with elementary school education amounted to 1 person with a percentage (1.0%), respondents with junior high school education amounted to 16 people with a percentage (16.7%), respondents with high school education amounted to 57 people with a percentage (59.4%), respondents with D3 education amounted to 3 people with a percentage (3.1%), respondents with S1 education amounted to 15 people with a percentage (15.6%), respondents who had S2 education amounted to 4 people with a percentage (4.2%).

d. Work

Respondents who worked as midwives 1 person with a percentage (of 1.0%), respondents who worked as laborers 6 people with a percentage (6.3%), respondents who worked as lecturers 1 person with a percentage (1.0%), respondents who worked as teachers 2 people with a percentage ((2.1%), respondents who worked as housewives 25 people with a percentage (26.0%), respondents who worked as employees 8 people with a percentage (8.3%), Respondents who work as employees 2 people with a percentage (2.1%), respondents who work as entrepreneurs 31 people with a percentage (32.3%), respondents who work as entrepreneurs 2 people with a percentage (2.1%), while students as many as 18 people with a percentage (18.8%).

1. Univariate Analysis

Univariate analysis is carried out to obtain an overview of the description of each variable in the study. The analyzed list is obtained from distribution, frequency, and percentage data.

The percentage of respondents who qualified for latrines was 16 people or 16.7%, while those who did not meet the requirements were 80 people or 83.3%. The percentage of respondents who meet the clean water

requirements is 11 people or 11.5%, while those who do not meet the requirements are 85 people or 88.5%. The percentage of respondents who met the requirements for a good trash can was 7 people or 7.3%, while those who did not meet the requirements were 89 0rang or 92.7%, and the percentage of respondents who met the requirements for good wastewater disposal was 19 people or 19.8%, while those who did not meet the requirements were 77 0rang or 80.2%. Of the 96 respondents, there were 79 respondents with diarrhea, or 82.3%, and 17 respondents who did not suffer, or 17.7%.

2. The Relationship of Latrines with the Incidence of Diarrhea

The provision of family latrines or fecal disposal sites is also a means of sanitation related to the incidence of diarrhea. The type of fecal disposal that is not sanitary will shorten the chain of transmission of diarrheal diseases.

Healthy Latrines According to Notoatmojo (2007) are as follows: do not pollute the surrounding soil, do not pollute the surrounding soil surface, do not pollute the surrounding groundwater, are not accessible to insects, do not cause odor, are easy to use and maintain, and the design is simple.

Based on the results of the study, it can be seen that from 96 samples who met the latrine requirements and suffered from diarrhea as much as (50.0%) and did not get diarrhea as much (50.0%). While those who did not meet the latrine requirements suffered from diarrhea as much (88.8%) and did not suffer from diarrhea as much (11.3%).

The results of this study are in line with the results of research conducted by Meithyra Melviana S et al (2014) on the Relationship of Latrine Sanitation and Clean Water with the Incidence of Diarrhea in Toddlers in Waterfall Village, Medan Marelan District, Medan City In 2014, it was found that the condition of latrines that met the requirements for healthy latrines in Waterfall Village was 9 (30%), while those who did not meet the requirements for healthy latrines were 21 (70%), while for the use of latrines by toddlers with the category is always as many as 10 (33.3%), while the category is sometimes 20 (66.7%).

3. The Relationship between Clean Water Source Facilities and the Incidence of Diarrhea in the Working Area of Sentosa Baru Health Center

The provision of clean water in the household must be qualified both physically, bacteriologically, and chemically qualified. The physical requirements for healthy drinking water are clear (colorless), tasteless, and odorless, the temperature is below the outside air temperature, so in everyday life how to recognize water that meets these physical requirements is not difficult. The bacteriological requirement for water is that it must be free from all bacteria, especially pathogenic bacteria. While chemically required, healthy drinking water must contain certain substances in certain amounts as well. Lack or excess of one of the chemicals in the water will cause physiological disorders in humans.

Based on the results of the study, it can be seen that from 96 samples who meet the requirements for clean water facilities and suffer from diarrhea as much as (54.5%), and those who meet the requirements for clean water and are not exposed to air as much as (45.5%). Meanwhile, those who did not meet the requirements for clean water facilities and suffered from diarrhea as much as (85.9%), and did not get diarrhea as much (14.1%). Chi-Square test results obtained P Value = 0.010 which means that there is a relationship between clean water facilities and the incidence of diarrhea in the Sentosa Baru Health Center Working Area.

The results of this study are in line with the results of research conducted by Meithyra Monika P (2021) concerning the Relationship between Basic Sanitation and the Incidence of Diarrhea in the Community in the Working Area of the Bahorok Health Center, Bahorok District, Langkat Regency In 2021, it was obtained that respondents who had clean water facilities with qualified categories and experienced diarrhea amounted to 12 respondents (50.0%), respondents who had clean water facilities with the category of meeting the requirements for not diarrhea amounted to 12 respondents (50.0%) and respondents who have clean water facilities with ineligible categories experiencing diarrhea amounted to 40 respondents (97.6%), respondents who had clean water facilities did not meet the requirements for non-diarrhea amounted to 1 respondent (2.4%).

Supported by the Ministry of Health of the Republic of Indonesia (2017) that diarrhea can be caused by other causes, namely environmental factors such as clean water facilities, where clean water facilities are needs that must be met by the community both for the process of self-cleaning, tools or objects as well as ingredients to meet the needs in cooking.

4. The Relationship between Garbage Can Facilities and the Incidence of Diarrhea in the Working Area of Sentosa Baru Health Center

Based on the results of the study, it can be seen that from 96 samples who met the requirements of trash can facilities and suffered from diarrhea as much as (57.1%), and those who met the requirements of trash can facilities and were not exposed to dairy as much as (42.9%). Meanwhile, those who did not meet the requirements for trash can facilities and suffered from diarrhea as much as (84.3%) and did not get diarrhea as much (15.7%). The results of the Chi Square test obtained a value of P Value = 0.070 which means that this

test is said to be meaningless. There is no relationship between the facilities of the trash can and the incidence of diarrhea in the Sentosa Baru Health Center Working Area.

This is in line with research by Lintang Sekar Langit (2016) showing p = 0.225 > 0.05 there is no relationship between the condition of the garbage dump and the incidence of diarrhea in toddlers in the working area of the Rembang 2 health center.

Based on the results of the study, it can be known that the results of chi-square testing obtained p value = 0.070> 0.05, it was concluded that there was no significant relationship between the source of waste management facilities and the incidence of diarrhea. This is due to the large number of people who care about the facilities of the trash can and the distance between the source of drinking water and the source of pollution is more or equal to 10 meters.

5. The Relationship between Wastewater Disposal Facilities and the Incidence of Diarrhea in the Working Area of Sentosa Baru Health Center

Provision of healthy liquid waste disposal, which can drain wastewater from the source (kitchen, bathroom) to the wastewater reservoir smoothly without polluting the environment and cannot be reached by insects. Houses that dispose of wastewater on open ground without sewage channels will make environmental conditions dirty, and muddy, cause unpleasant odors, and can be a breeding ground for insects, especially mosquitoes, and cause diarrhea due to a polluted environment. Wastewater management is an effort to reduce or stabilize pollutants so that when disposed of they do not endanger the environment and health. (Wulandari Retno Puji, 2014).

From the results of the study, it can be seen that from 96 samples who met the SPAL requirements and suffered from diarrhea as much as (36.8%), and those who met the SPAL requirements and did not get daire as much as (87.0%). While those who did not meet the SPAL requirements and suffered from diarrhea as much (87.0%), and did not get diarrhea as much (13.0%). Chi Square test results obtained P Value = 0.015 which means that there is a relationship between SPAL and the incidence of diarrhea in the Sentosa Baru Health Center Working Area.

This is in line with the results of previous research conducted by Rahmad Hasymi (2019) showing that p-value = 0.004< 0.05, it was concluded that there is a significant relationship between Liquid Waste management and diarrhea events. In line with the research of Zulmeliza Rasyid, Reski Meliyanti, et al (2017) showed p = 0.004 < 0.05, it was concluded that there was a significant relationship between liquid waste management and the incidence of diarrhea in toddlers. In line with Ahmad Rizki's research (2019) shows that the value of p-value = 0.000 with a significance level of 5% (0.05), it shows that there is a significant relationship between Liquid Waste Sewerage Facilities and the incidence of diarrhea in toddlers in Hutaimbaru Village, Padang Sidipuan City.

CONCLUSION

1. There is a significant relationship between the provision of latrine facilities and the incidence of diarrhea in the working area of the new Sentosa Health Center, with a p-value = 0.000.
2. There is a significant relationship between the provision of clean water facilities and the incidence of diarrhea in the working area of Sentosa Baru Health Center, with a p-value = 0.010.
3. There is no significant relationship between the provision of trash can facilities and the incidence of diarrhea in the working area of Sentosa Baru Health Center, with p-value = 0.070.
4. There is a significant relationship between the provision of wastewater disposal facilities and the incidence of diarrhea in the working area of Sentosa Baru Health Center, with p-value = 0.015

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