The Relationship Of Environmental Sanitation With The Event Of Diarrhea On Children In The Working Area Of The Sihepeng Health Center

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Article Info

ABSTRACT

Background: Based on data from the Central Statistics Agency (BPS) of North Sumatra in 2019 it was stated that the main water sources most used by households for drinking were pump water (21.44%), tap water (11.84%) and protected wells (11. 27%) and according to data from Riskesdas in 2013 it is known that 65.2% of households in Indonesia use healthy latrines. Objective: This study aims to determine the relationship between environmental sanitation and the incidence of diarrhea in children under five in the working area of the Sihepeng Public Health Center. Methods: This type of research uses quantitative research with a case control approach which was conducted from August 2021 to February 2022 in the working area of the Sihepeng Health Center, Mandailing Natal Regency. The sample in this study were 42 respondents with diarrhea and 42 respondents without diarrhea with a total sample of 84 respondents. The analysis was carried out by univariate analysis and bivariate analysis by Chi-Square test. Research Results: Based on the results of bivariate analysis, latrine ownership was obtained (p=0.046), drinking water source (0.023), and physical quality of clean water (p=0.395). Conclusion: The analysis proves that there is a significant relationship between ownership of latrines and drinking water sources with the incidence of diarrhea in children under five in the work area of the Sihepeng Public Health Center.

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1. INTRODUCTION

Environmental sanitation is an important part in improving the degree of health which in essence environmental sanitation is a condition especially optimum environmental conditions so that it can have a positive influence on optimum health status as well. Environmental sanitation prioritizes prevention of environmental aspects so that it can be free from disease. Sanitation

efforts can reduce the number of germs in the environment so that the degree of human health is well maintained (Ahmad Rizki. 2019).

According to UNICEF 2019, in the world there are 1.7 billion diarrhea problems that occur every year with a death rate of 1.5 million per year listed in toddlers around 525,000 per year. In 2017 there were 8% of deaths in children aged 5 years caused by diarrhea, which means that more than 1,300 children die per day or around 480,000 children die each year (UNICEF, 2019).

In Indonesia, the use of latrine facilities is still not evenly distributed, according to data from Riskesdas in 2013 it is known that 65.2% of households in Indonesia use healthy latrine facilities (Riskesdas. 2013).

Based on the results of the 2019 National Socio-Economic Survey (Susenas), it is stated that households in North Sumatra that use septic tanks/SPAL as many as (86.60%), ponds or rivers (4.36%), soil holes or in gardens as much as 8.08% and others as much as 0.96% (North Sumatra Health Profile. 2019).

For the use of clean water facilities based on data from the Central Statistics Agency (BPS), clean water facilities that are suitable for use in Indonesia are 72.55%. This achievement has not yet reached the target of the Sustainable Development Goals (SDGs).

Based on data from the Indonesian Ministry of Health 2018 states that the proportion of defecation behavior in latrines in 2013 was the highest in DKI with 98.2% and in 2018 the highest was in DKI with 97.6% and the lowest was in in Papua with a total of 55.8% (Ministry of Health. 2018).

Based on data from the Central Statistics Agency (BPS) of North Sumatra in 2019 it was stated that the main water sources most used by households for drinking were pump water (21.44%), tap water (11.84%) and protected wells (11. 27%) (North Sumatra Health Profile 2019).

Based on data from the Central Statistics Agency (BPS) of North Sumatra in 2019 it was stated that the percentage of households with the highest drinking water supply was in the city of Medan, namely (97.35%), Sibolga City (95.10%), and Pematang Siantar City (91.77%). Meanwhile, the lowest percentage of households according to access to safe drinking water is in Nias District (27.09%), North Padang Lawas District (39.93%) and Padang Sidimpuan City (43.63%) (Sumut Health Profile 2019).

The results of the 2018 Basic Health Research (Riskesdas) stated that the highest prevalence of diarrhea based on the diagnosis of health workers occurred in the 1-4 year age group as much as 11.5% and in infants as much as 9% (Kemenkes RI, 2020).

Based on the Central Statistics Agency (BPS) it is stated that households in Mandailing Natal that use tank-type feces disposal sites are (55.99%), ponds/rivers as many as (32.24%), soil pits or gardens (8.3%)) and while the percentage of households with proper drinking water in Mandailing Natal Regency was 45.33% (North Sumatra Province Health Profile. 2019).

According to the Health Profile of Mandailing Natal Regency (2015), from 2013 to 2015 the number of cases has not shown a decrease in the number of diarrheal diseases. In 2013 the number of diarrhea sufferers was 10,089 cases (an increase of 31% from 2012). In 2014 the number of cases of diarrhea was still quite high, namely 9,147 cases. In 2015 as many as 10,534 cases were handled. This estimate is still quite potential for the spread of diarrheal diseases (Mandailing Natal Health Profile, 2015).

According to the Mandailing Natal District Health Profile, in 2019 there were 52.85% cases of diarrhea in toddlers (District/City Health Profile, 2019).

Based on disease data at the Sihepeng Health Center, Mandailing Natal Regency, diarrheal disease in toddlers is still high in the Sihepeng Health Center. In 2020 the total number of toddlers in the Sihepeng Health Center area is 1,377 toddlers and cases of diarrheal disease in toddlers are 149 toddlers (Profile of the Sihepeng Health Center, 2020).

This research is supported by several previous studies, namely research conducted by Soentpiet (2015) which proves that there is a relationship between feces disposal sites and diarrhea in the Tondano watershed. Based on the results of Devy's research (2016) on the relationship between drinking water sources and the incidence of diarrhea in families and according to Ika Dharmayanti's research (2020) on the role of the environment and the individual on diarrhea problems in Java and Bali. Based on the results of Yuzika's research (2019) regarding the relationship between environmental sanitation and the incidence of diarrhea in toddlers.

Based on the results of the initial survey and consultation with the environmental health section of the puskesmas, it was stated that diarrheal disease in children under five was one of the highest diseases in the Sihepeng Health Center with 149 children under five. healthy latrines. Not infrequently, the community and toddlers also bathe and wash clothes in the same river. Regarding the source of water, many people still use dug wells, sometimes the water is not cooked for consumption and the physical quality of the water is cloudy and smells. So that it can lead to a higher incidence of diarrhea in children under five in the working area of the Sihepeng Health Center.

From the description of the background above, the authors are interested in conducting research on the Relationship between Environmental Sanitation and the Incidence of Diarrhea in Toddlers in the Work Area of the Sihepeng Health Center.

2. RESEARCH METHODE

This type of research is a quantitative approach with an observational nature using a Case Control study design using a retrospective approach. Case Control Research is a study conducted by comparing the case group, namely toddlers who suffer from diarrhea while the control group is toddlers who do not suffer from diarrhea. This study was conducted in the Sihepeng Health Center Work Area, Mandailing Natal Regency. The time of this research was carried out in August 2021 to February 2022. in this study were all toddlers aged 2-5 years who resided in the Work Area of the Sihepeng Health Center, Mandailing Natal Regency. respondents. The sampling technique used was non-probability sampling method by consecutive sampling, namely the sampling of the case group and the control group sample based on the sequence of secondary data (case study population and control population). The data sources in this study are primary data and secondary data. Meanwhile, the data analysis method uses the SPSS application.

3. RESULT AND ANALYSIS

Table 1. Characteristics of Gender and Age

| Karakteristik | KejadianDiare | | | |
| | Kasus | | Kontrol | |
	N	%	N	%
JenisKelamin				
Laki-laki	21	51.2	16	37.2
Perempuan	20	48.8	27	62.8
Total	41	100.0	43	100.0
Umur				
2-3 tahun	26	63.4	19	44.1
4-5 tahun	15	36.6	24	55.9
Total	41	100.0	43	100.0

Based on Table 1 above, it shows that of the 41 respondents in the case group, the most gender was male, namely 21 respondents (51.2%), while from 43 respondents in the control group, the most gender was female, namely 27 respondents (62.8%).

Based on the age group, it shows that from 41 respondents in the case group, the most dominant age is at the age of 2-3 years, namely 26 respondents (63.4%), while from 43 respondents in the control group, the most dominant age is at the age of 4-5 years, namely 24 respondents (55.9%).

Table 2. The relationship between latrine ownership and the incidence of diarrhea

| KepemilikanJamban | KejadianDiare | | | | Total | | p-value |
| | Kasus | | Kontrol | | | | |
	N	%	N	%	N	%	
Baik	14	34.1	24	55.9	38	45.2	0.046
Buruk	27	65.9	19	44.1	46	54.8	
Total	41	100.0	43	100.0	84	100.0	

Based on table 2 above, it explains that respondents who have good latrine ownership in the case group are 14 respondents (34.1%) and 27 respondents (65.9%). Meanwhile, respondents who have good latrine ownership in the control group are 24 respondents (55.9%) and 19 respondents (44.1%).

Based on the results of statistical test analysis, the p-value is 0.046. This means that p<0.05, which means that there is a relationship between latrine ownership and the incidence of diarrhea.

Table 4 Relationship of Physical Quality of Clean Water with the Incidence of Diarrhea

KualitasFisik Air Bersih	KejadianDiare				Total		p-value
	Kasus		Kontrol				
	N	%	N	%	N	%	
Baik	26	63.4	31	72.1	57	67.9	0.395
Buruk	15	36.6	12	27.9	27	32.1	
Total	41	100.0	43	100.0	84	100.0	

Based on table 4 above, it explains that respondents who have good physical quality of clean water in the case group are 26 respondents (63.4%) and poor physical quality of clean water 15 respondents (36.6%). Meanwhile, the respondents who had good physical quality of clean water in the control group were 31 respondents (72.1%) and 12 respondents (27.9%).

Based on the results of statistical test analysis, the p-value is 0.395. This means that p> 0.05 which means that there is no relationship between the physical quality of clean water and the incidence of diarrhea.

DISCUSSION

The relationship between latrine ownership and the incidence of diarrhea

This finding states that latrine ownership is associated with the incidence of diarrhea with a p-value of 0.046. which means there are 46 respondents (54.8%) who have bad latrine ownership and 38 respondents (45.2%) who have good latrine ownership. The results of the researcher's observations are that there are still many people who are not aware of the cleanliness and health of latrine facilities in their homes so that it can facilitate the incidence of diarrhea in toddlers and there are still family latrines that do not have a latrine building in accordance with health requirements. In a simple construction (semi-sanitary), the hole is not closed, the latrine floor is made of material that is not waterproof and the bottom does not have a septic tank or cubluk, so the SPAL is discharged into the pool.

This study is in line with the 2018 research by Ubai Dillah which stated that there was a relationship between latrine ownership and the incidence of diarrhea. The results of the univariate analysis showed that there were 70 respondents who did not have latrines and experienced diarrhea, totaling 22 people and respondents who had latrines and experienced diarrhea, there were 8 people who did. p-value 0.018 (p-value 0.05). This happens because there are still many people who defecate openly, especially people who live in areas close to rivers and vacant land (Ubai Dillah. 2018).

If referring to Islamic teachings, the use of latrines is highly recommended in Islam when defecating or defecating. The hadiths that explain the prohibition of open defecation are:
Rasulullah SAW said: "Fear you with three accursed things, namely defecation in a water source, a place for humans to pass and in a place of shelter" (HR. Abu Dawud).

Islam is very concerned about holiness and cleanliness. So that the procedure after urinating and defecating or what is called istinja is also studied in Islam and is listed in the QS. Al-Baqarah verse 222 which reads:

إِنَّ اللّٰهَ يُحِبُّ التَّوَّابِيْنَ وَيُحِبُّ الْمُتَطَهِّرِيْنَ

It means "Indeed, Allah loves those who repent and loves those who purify themselves". Even the Prophet Muhammad SAW taught us how to istinja 'by using clean and holy water and also by using stones.

A clean and healthy life is a way to maintain health. Health is a blessing from Allah that we must always be grateful for because with health we can enjoy the happiness of life, namely by doing routines and worshiping well.

Relationship of Drinking Water Sources with Diarrhea Incidences

This finding states that the source of drinking water is associated with the incidence of diarrhea with a p-value of 0.023. which means that there are 60 respondents (71.4%) who have poor drinking water sources and 24 respondents (28.6%) who have good drinking water sources. The results of observations made by the community there are not using water from the PDAM because the area has not received water flow from the PDAM. In washing, bathing, and latrine/wc activities, many local residents still use water from rivers and wells. Residents who use river water as a source of water for their daily needs can increase the risk of diarrhea due to direct contact with organisms in the water and in this area some latrines are located directly next to wells, so that it can contaminate well water used. as a water source.

This study is in line with Zakiyah's research (2018) which states that there is a relationship between environmental factors (source of drinking water) with the incidence of diarrhea in children under five at the Batang Health Center, Sumenep Regency with a p-value of 0.028 <α (α = 0.05). According to Putranto's research (2020) states that there is a relationship between water sources and the incidence of diarrhea with a p-value of 0.000 (p<0.05) which states that from 75 respondents who have water sources that meet the requirements and experience diarrhea, 46 people (61.3%) and There are 29 people (38.7%) who have water sources that do not meet and experience diarrhea. According to Henny's 2020 research on the relationship between basic sanitation and the incidence of diarrhea in children under five in Durian Village, Pantai Labu District, Deli Serdang Regency, the results showed that there was a relationship between clean water facilities and the incidence of diarrhea in children aged 0-4 years in Durian Village with a p-value of 0.009. (p<0.05).

Relationship of Physical Water Quality with Diarrhea Incidences

This finding explains that physical water quality is not related to the incidence of diarrhea with a P-value of 0.395, which means that there are 57 respondents (67.9%) who have good physical quality of clean water and 27 respondents (32.1%) who have good physical quality of clean water. bad. This happens because the water at the research site physically uses clean water, namely by dug wells, some of which are from the wall with a depth of 10 meters so that it is not accessible to be contaminated by feces and some of the feces is drained in the river instead of in the ground. Therefore, at the research location, the water quality is still physically maintained, but many toddlers are also found to be suffering from diarrhea. This is because in the research location, many people use flowing river water to be used as washing clothes and cooking utensils. Water made from wells is only used for bathing because there is very difficult water for walking and limited. Therefore, many people use flowing river water.

This study is in line with Umiati's 2010 study which stated that the physical quality of clean water was not associated with the incidence of diarrhea in children under five with a p-value of 0.307. based on the results in the field that the condition of water that does not meet health requirements is not directly consumed by the respondent. This is because the water to be used

is first deposited in a storage area so that it is separated from dirt in the form of soil or mud, then the water is boiled until it boils.

4. CONCLUSION

Based on the results of research and discussions that have been carried out by researchers, the conclusions that researchers can put forward are:

[1] There is a significant relationship between latrine ownership and the incidence of diarrhea in children under five in the work area of the Sihepeng Public Health Center with a p-value of 0.046.

[2] There is a significant relationship between drinking water sources and the incidence of diarrhea in children under five in the work area of the Sihepeng Public Health Center with a p-value of 0.023.

[3] There is no relationship with the physical quality of clean water with the incidence of diarrhea in children under five in the work area of the Sihepeng Public Health Center with a p-value of 0.395.

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