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Stunting control factors related to the occurrence of diarrhea in children in the work area of the Bukit Timah Health Center

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Abstract

background: The mortality rate (CFR) during outbreaks of diarrhea in Indonesia is expected to be <1%. However, diarrhea from 2010 to 2017 found that the CFR during outbreaks was still quite high (>1%). **The purpose of this research** This study aims to determine the factors associated with the incidence of diarrhea in children under five at the Bukit Timah Health Center, Dumai City. This research is study analytic with a cross-sectional design.

Methods: The research was conducted at the Bukit Timah Health Center. The research population is 120 people with 93 samples. The statistical test used in this study was the Chi Square test with a 95% confidence level.

Results: There is a relationship between knowledge (p value = 0.004), food factors (p value = 0.014) with the incidence of diarrhea in children under five at Bukit Timah Health Center, Dumai City and nota There is a relationship between environmental factors (p value = 0.620), socio-economic (p value = 0.058) with the incidence of diarrhea in children under five at Bukit Timah Public Health Center, Dumai City.

Conclusion: It is hoped that Bukit Timah Health Center officers will conduct counseling to increase mother's knowledge about diarrhea in toddlers.

Keywords : Diarrhea, Environment, Knowledge, Socio-Economic

INTRODUCTION

Diarrhea is the fourth largest killer of children in the world with the number of victims reaching 500 thousand people per year. As many as 42 percent of deaths from diarrhea are known to occur in Nigeria and India. The cause is disease germs such as rotavirus and cholera which infect from contaminated water(1). The mortality rate (CFR) during outbreaks of diarrhea in Indonesia is expected to be <1%, but the recapitalization of outbreaks of diarrhea from 2010 to 2017 shows that the CFR during outbreaks of diarrhea is still quite high (> 1%) except in 2011 the CFR at the time of the outbreak was 0.40%, while in 2017 the CFR of diarrhea during outbreaks decreased compared to 2016 which was 1.97%(2).

Proper sanitation is one of the conditions for the creation of a healthy and comfortable environment. Proper

sanitation which is reflected in owning a latrine with a septic tank is a basic need for every individual(3). Poor sanitation conditions are a breeding ground for infectious diseases that can cause community morbidity, especially those under five years of age who are still susceptible to disease(4). Efforts to fulfill proper sanitation facilities are an important part in improving welfare. For children, poor sanitation will have even worse consequences(5). Poor sanitation and hygiene behavior and unsafe drinking water contribute to 88 percent of child deaths due to diarrhea worldwide(6). Many factors can cause diarrhea in toddlers, such as infections caused by bacteria, viruses and parasites. Or there are absorption disorders in the intestine , allergies, chemical poisoning or the presence of toxins contained in food(7), immunodeficiency, namely decreased

immunity and other causes(8). Factors that cause acute diarrhea in toddlers include environmental factors, mother's level of knowledge, socio-economic community and food consumed(9).

Azkiya's research in 2014 stated that clean water facilities that did not meet the requirements had a 1.8 times risk of causing diarrhea in children under five(10). One of the clean water facilities (SAB) that has a major influence on the incidence of diarrhea is a source of drinking water(11). Toddlers who consume drinking water that does not meet the requirements have a risk of suffering from diarrhea 2.61 times compared to toddlers who consume drinking water that meets the requirements(12). Research conducted by Febrianti (2019) found that statistically there was a relationship between economic factors and the incidence of diarrhea in children under five (p value = 0.033), there was a relationship between the mother's knowledge of a healthy environment and the incidence of diarrhea in children under five (p value = 0.045) and there was a relationship between mother's knowledge about diarrhea and the incidence of diarrhea in children under five (p value = 0.028)(13).

The Infant Mortality Rate (IMR) of Riau Province from 2014 was 11 to 3 in 2018. The causes of neonatal death (29 days-11 months) in 2018 in Riau Province were caused by pneumonia, diarrhea and jaundice(14). Diarrhea cases in children under five in Riau Province who received health services were an average of 4.5% of the target number of 656,733 people. Indragiri Hulu and Meranti (8%). Meanwhile, Dumai City diarrhea case service was 6.7%(15).

Diarrhea Sickness of all ages in Dumai City during 2018 was 8,550 sufferers or IR of 270/1000 population and mortality rate was 0 or CFR = 0%. When compared with the program target in 2018 where the IR Diarrhea was 214 per 1,000 population, the achievement of the IR Diarrhea in Dumai City was still lower than

the target(16). While in the working area of the Bukit Timah Health Center itself, in 2018 there was an increase in cases of diarrhea in 2 urban villages, namely in 2018 as many as: 280 cases and there was an increase in cases in 2019 as many as : 289 cases(17).

METHODS

The type of research conducted is analytical research with a cross-sectional design, namely measuring or observing between risk factors and disease at the same time (one time). This study aims to determine the factors associated with the incidence of diarrhea in children under five in the working area of Bukit Tin Public Health Center. The research was carried out in the working area of the Bukit Timah Public Health Center, Dumai City, the number of samples was 93 samples. Sampling with the technique or sampling used in this study is Cluster Random Sampling. The analysis used was univariate and bivariate analysis to see the relationship between each environmental, knowledge, socio-economic and food variables with the incidence of diarrhea in children under five at Bukit Timah Health Center using computerization.

RESULTS

Univariate Analysis

1. Respondent's Environmental Factors

Table 1. Frequency Distribution of

No	Environment	f	%
1.	Well	59	63.4
2.	not good	34	36.6
	amount	93	100

Respondents by Environmental Factors in the Working Area of the Bukit Timah Health Center, Dumai City

Based on table 1. It can be seen that from 93 respondents with good

environmental criteria as many as 63.4% and 36.6% with unfavorable environmental criteria.

2. Respondent Knowledge

Table 2. Frequency Distribution of respondents by Knowledge in the Working Area of the Bukit Timah Health Center, Dumai City

No	Knowledge	f	%
1	Well	25	26.9
2	Enough	35	37.6
3	Not enough	33	35.5
amount		93	100

Based on table 2. It can be seen that of the 93 respondents with sufficient knowledge as much as 37.6%, with less knowledge as much as 35.5% and good knowledge as much as 26.9%.

3. Respondent's Socio-Economic

Table 3. Frequency Distribution of Respondents by Socio-Economic in the Working Area of the Bukit Timah Health Center, Dumai City

No	Socio-Economic	f	%
1	>MSE	51	54.8
2	<MSE	42	45.2
amount		93	100

Based on table 3. It can be seen that out of 93 respondents have

Table 6. The Relationship of Respondent's Environmental Factors with the Incidence of Diarrhea in the Working Area of the Bukit Timah Health Center, Dumai City

Environment	diarrhea				Total		p-values
	No Diarrhoea		diarrhea		f	%	
	F	%	f	%			
Well	34	57.6	25	42.4	59	100	0.620
not good	17	50	17	50	34	100	
Total	51	54.8	42	45.2	93	100	

Bivariate Analysis

1. The Relationship of Respondent's Environmental Factors with the Incidence of Diarrhea in the Working Area of the Bukit Timah Health Center, Dumai City

socioeconomic status > MSE as much as 54.8% and socio-economic status < MSE as much as 41.7%.

4. Respondent's Food

Table 4. Frequency Distribution of Respondents by Food in the Working Area of the Bukit Timah Health Center, Dumai City

No	Knowledge	f	%
1	Well	56	60.2
2	not good	37	39.8
amount		93	100

Based on table 4. It can be seen that of the 93 respondents who have a good food factor as much as 60.2% and have a bad food factor of 39.8%.

5. diarrhea

Table 5. Frequency Distribution of Respondents by diarrhea in the Working Area of the Bukit Timah Health Center, Dumai City

No	diarrhea	f	%
1	No Diarrhoea	51	54.8
2	diarrhea	42	45.2
amount		93	100

Based on table 5. it can be seen that 54.8% of the 93 respondents did not experience diarrhea and 45.2% experienced diarrhea.

Based on table 6, it can be seen that the majority of respondents have environmental factors with good criteria and do not experience diarrhea as much as 57.6%. Statistical test results show that the p value obtained is 0.620, this shows a p value of 0.620 >

alpha 0.05, meaning that there is no relationship between the respondent's environmental factors and the incidence of diarrhea in the Bukit Timah Public Health Center, Dumai City

2. The Relationship of Respondents' Knowledge Factors with Diarrhea Incidence in the Work Area of Bukit Timah Health Center, Dumai City

Based on table 7, it can be seen that the majority of respondents had sufficient knowledge and did not experience diarrhea as much as 76.0%. The results of the statistical test showed that the p value obtained was 0.000, this indicates a value of $0.004 < \alpha 0.05$, meaning that there is a relationship between the respondent's knowledge factor and the incidence of diarrhea in the Bukit Timah Public Health Center, Dumai City

Table 7. The Relationship of Respondents' Knowledge Factors with Diarrhea Incidence in the Work Area of Bukit Timah Health Center, Dumai City

Knowledge	diarrhea				Total		p-values
	No Diarrhoea		diarrhea		f	%	
	F	%	f	%			
Well	19	76.0	6	24.0	25	100	0.004
Enough	21	60.0	14	40.0	35	100	
Not Enough	11	33.3	22	66.7	33	100	
Total	51	54.8	42	45.2	93	100	

3. The Relationship of Respondents' Socio-Economic Factors with the Incidence of Diarrhea in the Working Area of Bukit Timah Health Center, Dumai City

Based on table 8, it can be seen that the majority of respondents have socioeconomic status $> MSE$ and did not experience diarrhea as much as 64.7%. The results of the statistical test

showed that the p value obtained was 0.058, this indicates a value of $0.058 > \alpha 0.05$, meaning that there is no relationship between the respondent's socioeconomic status and the incidence of diarrhea in the working area of the Bukit Timah Public Health Center, Dumai City.

Table 8. The Relationship of Respondents' Socio-Economic Factors with the Incidence of Diarrhea in the Working Area of Bukit Timah Health Center, Dumai City

Socio-economic	diarrhea				Total		p-values
	No Diarrhoea		diarrhea		f	%	
	F	%	f	%			
$>MSE$	33	64.7	18	35.3	51	100	0.058
$<MSE$	18	42.9	24	57.1	42	100	
Total	51	54.8	42	45.2	93	100	

4. The Relationship of Respondents' Food Factors with the Incidence of Diarrhea in the Working Area of Bukit Timah Health Center, Dumai City

Based on table 9, it can be seen that the majority of respondents had good dietary factors and did not experience diarrhea as much as 66.1%. The results of the statistical test showed that the p value obtained was

0.014, this indicates a value of 0.014 < alpha 0.05, meaning that there is a relationship between the respondent's food factors and the incidence of

diarrhea in the working area of the Bukit Timah Public Health Center, Dumai City.

Table 9. The Relationship of Respondents' Food Factors with the Incidence of Diarrhea in the Working Area of Bukit Timah Health Center, Dumai City

Food	diarrhea				Total		p-values
	No Diarrhoea		diarrhea		f	%	
	F	%	f	%			
Well	37	66.1	19	33.9	56	100	0.014
not good	14	37.8	23	62.2	37	100	
Total	51	54.8	42	45.2	93	100	

DISCUSSION

According to Lawrence Green (1993) in Notoatmodjo (2010), that the health of a person or society is influenced by factors, namely behavioral factors and factors outside of behavior, then the behavior itself is determined or formed from 3 factors, namely predisposing factors that manifest in knowledge,

beliefs, beliefs, values and so on, enabling factors that are manifested in the physical environment, the availability or unavailability of facilities or facilities and reinforcing factors that are manifested in the attitudes and behavior of officers which is a reference group of people's behavior.

According to the assumption that environmental researchers do not have a significant relationship with the incidence of diarrhea in toddlers because it is suspected that when the research took place, researchers only asked questions in the form of house conditions, availability of clean water facilities, waste from homes without asking questions or testing other drinking water requirements. Safe drinking water must meet physical requirements, bacteriological requirements and chemical requirements. The incidence of diarrhea is not only influenced by environmental factors but can also be influenced by other factors such as knowledge, attitudes, food consumed by toddlers or other factors.

Knowledge can form certain beliefs so that a person behaves in accordance with these beliefs, with good environmental health knowledge is expected to increase public awareness of the importance of achieving healthy environmental conditions and choosing healthy foods that are also rich in calories and protein, so that children grow up healthy with nutrition. sufficient. (Notoatmodjo, 2010).

According to Hidayah (2019), the main cause of the occurrence of diarrhea is the lack of knowledge of mothers with the incidence of diarrhea. Due to lack of information, many mothers are unaware of the incidence of diarrhea. Thus, respondents who have high knowledge are respondents who really know the incidence of diarrhea. While respondents who have sufficient knowledge and most do not know about the incidence of diarrhea. Regarding the relationship between mother's knowledge and the incidence of diarrhea in toddlers, it was found that there was a significant relationship between mother's knowledge and the incidence of diarrhea in toddlers.

According to the researcher's assumption, if someone's knowledge is good, he or she encourages someone to play an active role in doing positive things according to the knowledge they have. A person who knows the impact of the disease that will be caused if he does not perform

healthy behavior will make the person afraid and do things that can avoid the disease.

The same thing was also obtained by Amaliya (2010), who stated that: that there is no relationship between socioeconomic factors and the incidence of diarrhea in East Ciputat Village ($p = 0.028$). According to the researcher's assumption, apart from socioeconomic diarrhea, diarrhea can also be caused by other factors such as knowledge and attitudes of mothers, such as research conducted by Ayu (2018) which states that there is a relationship between mother's knowledge about diarrhea and mother's attitude about diarrhea with diarrhea in infants.

Behavioral factors that cause the spread of germs and increase the risk of diarrhea are not giving full exclusive breastfeeding in the first month of life, not washing children's milk bottles, storing wrong food, using contaminated drinking water, not washing hands when cooking, eating, before eating. feeding a child, after defecating, after disposing of a child's stool, and not defecating properly (Soemirat, 2010).

According to the researchers, this is in accordance with the theory that diarrhea can be prevented by washing hands with soap until clean at five important times (before eating, after defecating, before touching your toddler, after cleaning your toddler after defecating, before the procedure). providing or serving food to anyone), consuming clean and healthy water or water that has been processed. Toddler health is very dependent on the food they eat. If the food they eat is not hygienic, the toddler will be susceptible to a disease, one of which is diarrhea. The more positive the mother's behavior regarding food hygiene, the lower the incidence of diarrhea in toddlers.

CONCLUSION

The majority of respondents aged 63.4% had good environmental criteria,

37.6% had sufficient knowledge, had socio-economic > MSE as much as 54.8%, had good food factors as much as 60.2% and did not experience diarrhea as much as 54.8%. There is no relationship between environmental factors (p value 0.620) and the incidence of diarrhea in children under five in the working area of Bukit Timah Public Health Center, Dumai City. A There is a relationship between the knowledge factor (p value 0.004) and the incidence of diarrhea in children under five in the Bukit Timah Public Health Center, Dumai City. There is no relationship between socio-economic factors (p value 0.058) and the incidence of diarrhea in children under five in the working area of Bukit Timah Public Health Center, Dumai City.

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