



FACTORS RELATED TO DIARRHEA IN CHILDREN 1-5 YEARS OLD IN THE WORK AREA OF PAMATANG RAYA PUSKESMAS, SIMALUNGUN REGENCY

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Abstract

Diarrhea is a condition where the frequency of bowel movements is more than 4 (four) times in infants and more than 3 (three) times in children. occurs as a result of a person's lack of information or knowledge. This research was conducted in the Pamatang Raya Community Health Center, Simalungun Regency from August to September 2020, with a sample size of 71 people using a quantitative analytical method through a cross-sectional approach. Data collection using secondary data was analyzed using the bivariate chi-square test. The results showed that in the good knowledge category as many as 15 people (21.1%), sufficient knowledge 26 people (36.6), less knowledge 30 people (42.3), negative attitudes as many as 47 people (66.2%), positive attitudes as many as 24 (33.4), good mother behavior as many as 26 people (36.6), less behavior as many as 30 people (42.3%). The conclusion of the study is that there is a relationship between knowledge, attitudes, and behavior of mothers towards diarrheal disease in toddlers at the Pamatang Raya Health Center.

Keywords : *knowledge, attitudes, behavior of mothers on diarrheal diseases in toddlers*

1. INTRODUCTION

Diarrhea is one of the health problems in developing countries, especially in Indonesia, both in rural and urban areas, this disease is endemic which often appears as an Extraordinary Event (KLB). Data from the Southeast Sulawesi Provincial Health Office shows that in 2012 the prevalence of diarrheal disease in Southeast Sulawesi was 4,182 per 100,000 population, and in 2014 it was 1,753 per 100,000 population. Diarrhea is still a public health problem in Southeast Sulawesi, which causes morbidity and mortality for children under five. In the world there are 1.7 billion cases of diarrhea that occur every year. , the number of cases of diarrhea sufferers was 49,898 cases. The majority are dominated by the age of under 1 year of around 700 toddlers, aged 1-4 years 1175 toddlers and over 5 years old 1728 toddlers (Dinkes, 2010). The incidence of diarrhea in children under five in Indonesia is 6.7%. Based on population characteristics, the under-five age group is the group with the highest prevalence of diarrhea with a prevalence of 9.2% and 12.2% in the 1-4 year age group (Riskesdas, 2013).

In the last ten years the number of diarrheal diseases has always fluctuated. In 2012 (24,525 cases); 2013 (18,982 cases), and in 2014 there were 20,470 cases of diarrheal disease or an increase of 7.84%. The number of cases is slightly above the estimated number of cases, namely 18,062 cases. Thus the diarrhea morbidity rate in 2014 was 24.25/1000 population, an increase compared to 2013 which was 22.78, but still lower than the previous 8 years, namely 29.41 (2012); 38.06 (2011); 54.73 (2010); 49.53 (2009); 47.45 (2008); 41.33 (2007) and 36.38 (2006). Of the number of cases found, 113.33% have been treated, the highest in the last 4 years was 106.45% (2013); 100% (2012); and 89.98% (2011). This figure exceeds the 2015 MSS indicator (100%). Trends in diarrheal disease in the last 8 years and the spread of Puskesmas in 2014 (Simalungun Profile 2014).

North Sumatra Province consists of 33 Regencies and Cities, one of which is Simalungun Regency. Simalungun Regency has 33 sub-districts and 46 health centers. Pamatang Raya Health Center is one of the Puskesmas which has a working area of 20 (twenty) villages located on Jalan Raya. According to a survey from researchers, there are 5 biggest diseases in the Pamatang Raya Health Center including: ARI (2734), High Blood Pressure Disease (969), Rheumatism (9805), DM (510) and Diarrhea (180). Patients with diarrheal disease at the Pamatang Raya Health Center

in 2018 totaled 180 toddlers. Toddlers who died 15 toddlers and who lived 165 toddlers in 2018. Several behaviors cause enteric bacteria and can increase the risk of diarrhea, including not fully breastfeeding for the first 4-6 months of life,

2. IMPLEMENTATION METHOD

2.1 Definition of Diarrhea

Diarrhea is a disease that causes sufferers to have frequent bowel movements, with watery stool conditions. In general, diarrhea occurs due to food and drink exposed to viruses, bacteria, or parasites. Diarrhea is one of the health problems in Indonesia. Diarrhea is a state of defecating frequency of more than 4 (four) times in infants and more than 3 (three) times in children, the consistency of watery stools, can be green or can also be mixed with mucus and blood (Maryunani, 2013).

2.2 Etiology

According to Hidayat (2007), the etiology of diarrhea can be divided into several factors, namely:

1. Infection Factor

This process can be initiated by the presence of micro-organisms (germs) that enter the contamination channel which then develops in the intestine and damages intestinal mucosal cells which can reduce the intestinal surface area resulting in changes in intestinal capacity which ultimately results in impaired intestinal function in the absorption of fluids and electrolytes. The presence of bacterial toxins will also cause the transport system to become active in the intestine, so that the mucosal cells are irritated and eventually fluid and electronic secretions will increase.

- a. Enteral infection is a channel of contamination which is the main cause in the area in children.
- b. Bacterial infections, namely vibrio, E.coli, salmonella, shigella, campylobacter, yersenia, aeromonas.
- c. Viral infections: rotavirus, adenovirus
- d. Parasite infestations are worms (ascaris, trichius, okyuris, strongyloides), protozoa (entamoeba histolityca, giardia lambilia, trichomonas hominis), fungi (candida albicans)
- e. Parenteral infections are infections in other body parts outside of the contaminant, such as acute otitis media (AOM), tonsillopharyngitis, bronchopneumonia, encephalitis, this situation is found in infants and children under 2 years of age.

2. Malabsorption Factor

Is a failure to absorb which results in increased osmotic then there will be a shift of water and electronics into the intestinal cavity which can increase the contents of the intestinal cavity so that diarrhea occurs.

- a. Carbohydrate malabsorption is disaccharides (intolerance to lactose, maltose and sucrose), monosaccharides (intolerance to lactose, fructose and galactose). In infants and children, the most common is lactose intolerance.
- b. Fat malabsorption
- c. Dietary factor protein malabsorption

It can occur if the existing toxin is not able to be absorbed properly and there can be an increase in intestinal peristalsis which eventually causes a decrease in the opportunity to absorb food such as spoiled food, toxic and food allergies.

3. Psychological Factors

Can affect the occurrence of special peristaltic increase that can affect the process of absorption of food such as: fear and anxiety. According to Nursalam 2008, in addition, there are several behaviors that can increase the risk of diarrhea, namely:

- a. Not fully breastfeeding for the first 4-6 months of life
- b. Using a milk bottle



- c. Storing cooked food at room temperature
 - d. Drinking water contaminated with fecal bacteria Do not wash hands after defecating, after defecating, or before handling food.
4. Osmotic Disorder
The presence of food or substances that cannot be absorbed will cause the osmotic pressure in the intestinal cavity to increase resulting in a shift of water and electrolytes into the intestinal cavity and subsequent diarrhea due to an increase in the intestinal cavity.
5. Secretion Disorder
Due to certain stimuli, for example, toxins in the intestinal wall, there will be an increase in the secretion of water and electronics into the intestinal cavity, then diarrhea occurs, because there is an increase in the contents of the intestinal cavity.
6. Intestinal motility disorders
Hyperperistalsis This will reduce the ability of the intestines to absorb food, causing diarrhea. On the other hand, if intestinal peristalsis decreases, it will cause bacteria to grow excessively, which then occurs.

2.3 Pathophysiologisti

According to Suriadi (2010), as a result of diarrhea both acute and chronic will occur:

- a. Increased motility and rapid intestinal emptying are the result of impaired absorption and excessive excretion of fluids and electrolytes.
- b. Fluid, sodium, potassium and bicarbonate move from the extracellular space into the feces, resulting in dehydration. diarrhea that occurs is a process of:
- c. Transport
Active Transport due to stimulation of bacterial toxins to electrolytes into the small intestine. Cells in the international mucosa experience irritation and increased secretion of fluids and electrolytes. Microorganisms that enter will damage intestinal mucosal cells, resulting in decreased intestinal surface area, changes in intestinal capacity and impaired absorption of fluids and electrolytes. Inflammation reduces the ability of the intestines to absorb fluids and electrolytes and nutrients. This occurs in malabsorption syndrome.
- d. Increased intestinal motility
May result in impaired intestinal absorption

2.4 Signs and Symptoms

Signs and symptoms of diarrhea include wheezing, restlessness, increased temperature, decreased appetite, liquid stools, mucus (+), blood sometimes (sometimes present), the color of the stool is green over time because it is mixed with bile, blisters on the anus, the stool becomes darker over time. acid (because of the amount of lactic acid that comes out). Finally, dehydration, weight loss, decreased skin turgor, eyes and crown of the neck, mucous membranes and mouth also dry skin. If you are severely dehydrated, your blood volume will decrease, so your pulse will quickly decrease, your awareness will decrease which then ends in shock (Dewi, 2010).

3. RESULTS AND DISCUSSION

3.1 RESULTS

3.1.1 Location and Time of Research

The location of this research was carried out in the Pamatang Raya Health Center Work Area, Simalungun Regency in 2020.

3.1.2 Samples

According to (Notoatmodjo, 2012), the sample is the object under study and is considered to represent the entire population. The sample in this study were 71 people. Therefore, the sample size can be determined using the Lemesshow formula (Hidayat, 2007) as follows:

$$Z^2 \frac{1a}{2P} (1-P) N$$

$$n = d^2 (N-1) + Z^2 \frac{1a}{2P} (1-P)$$

Information:

$$\begin{aligned}
 N &= \text{desired sample size} \\
 N &= \text{Population Size} \\
 d2 &= \text{Desired degree of accuracy } 5\% (0.05) \\
 P &= \text{Proportion of certain properties that are expected to occur in } N (0.5) \\
 Z_{21a/2} &= 1.96 \text{ with } = 0.1 \text{ } Z_{21a/2P} (1-P)N \\
 n &= d2 (N-1) + Z_{21a/2P} (1-P) \\
 &= 1,960.5 (1-0.5) 552 \\
 &= (0.05)^2 (552-1) + 196.0.5 (1-0.5) \\
 &= (0.98). (0.5). 552 \\
 n &= (0.0025) (551) + (0.98) (0.5) 270.48 \\
 n &= 1.8675 \\
 n &= 71
 \end{aligned}$$

3.2 Discussion

3.2.1 Data collection

1. Primary data

Primary data is data obtained directly from respondents, namely mothers who have toddlers 1-5 years who visit the Pamatang Raya Health Center Simalungun Regency in 2020.

2. Secondary Data

Secondary data is data obtained from the health agency of the Pamatang Raya Health Center.

3.2.2 Research Instruments

The research instrument or measuring instrument that will be used for data collection is a questionnaire (a list of questions and statements). In this study, the research adopted a questionnaire from Elpi's (2006) research.

3.2.3 Data processing

The primary data that has been collected is then processed with the SPSS system with the following data processing mechanisms:

- a. Editing
- b. Coding
- c. Entry
- d. Check data
- e. Tabulating
- f. Cleaning

3.2.4 Data analysis

1. Univariate Analysis

Univariate analysis was used to see the frequency distribution of each variable, namely the characteristics of the factors associated with diarrheal disease in toddlers, namely: age, education, knowledge, behavior, attitudes of mothers who have toddlers at the Pamatang Raya Public Health Center, Raya District, Simalungun Regency.

a. Knowledge

Table 1. Frequency Distribution of Respondents Based on Mother's Knowledge of Diarrhea in Toddlers in the Work Area of the Pamatang Raya Health Center.

NO	Knowledge	Amount	%
1	Not enough	15	21.1
2	Enough	26	36.6
3	Well	30	42.3
Total		71	100

The table above shows that it was found that 30 respondents had good knowledge of diarrheal diseases, 26 respondents (36.6%) had sufficient knowledge, and 15 respondents (21.1%), who had less knowledge.



b. Attitude

Table 2. Frequency Distribution of Respondents Based on Mother's Attitude to Diarrhea in Toddlers in the Work Area of the Pamatang Raya Health Center.

NO	Attitude	Amount	%
1	Negative	47	66.2
2	Positive	24	33.18
Total		71	100

From the table above Based on the mother's attitude, respondents who have a negative attitude are 47 (66.2%) people while those who have a positive attitude are 24 (33.18) people.

c. Behavior

Table 3. Frequency Distribution of Respondents Based on Mother's Behavior Against Diarrhea in Toddlers in the Work Area of the Pamatang Raya Health Center.

NO	Behavior	Amount	%
1	Well	32	45.1
2	Not enough	39	54.9
Total		71	100

Based on the table above, 32 respondents (.45.1%) have good behavior towards diarrheal disease, and 39 (54.9%) respondents behave less.

Table 4. Frequency Distribution of Respondents Based on Diarrhea in Toddlers in the Work Area of the Pamatang Raya Health Center.

NO	Diarrheal diseases	Amount	%
1	Well	18	25.4
2	Not enough	53	74.6
Total		71	100

Based on the table above, 18 respondents (25.4%) had a good condition of diarrheal disease and 53 respondents (74.6%) had a poor condition of diarrheal disease.

2. Bivariate Analysis

Bivariate analysis is intended to see the relationship of each related variable which has an analysis result of $p < 0.05$.

a. Relationship between knowledge of mothers and diarrheal diseases in children under five in the work area of the Pamatang Raya Public Health Center.

Based on the results of the study, the analysis of the relationship between mother's knowledge of diarrheal disease in children under five at the Pamatang Raya Public Health Center, Raya District, can be seen in the following table.

Table 5 the relationship between mother's knowledge of diarrheal disease in children under five in the work area of the Pamatang Raya Public Health Center.

Mother's knowledge	Diarrhea		Total		pValue
	f	%	f	%	
Well	15	21.1	15	100.0	0.02
Enough	26	36.6	26	100.0	
Not enough	30	42.3	30	100.0	
TOTAL	71	100	71	100.0	

Based on table 5, the distribution of the relationship between mother's knowledge and diarrheal disease in toddlers 1-5 years of age in the Pamatang Raya Community Health Center, Simalungun Regency in 2020, the results were obtained from 15 (21.1) respondents with good knowledge, 26 (36.6) respondents with sufficient knowledge. , and as many as 30 (42.3) respondents who have less knowledge,

Based on the results of the Chi-square statistical test, p value = $0.02 < (0.05)$. So it can be concluded that H_a is accepted, which means that there is a relationship between mother's knowledge and diarrhea.

b. Relationship of Mother's Attitude to Diarrhea in Toddlers Diarrhea in the Work Area of Pamatang Raya Health Center

Based on the results of the research, the relationship between mothers' attitudes towards diarrheal disease in toddlers can be seen in the following table

Table 6 Relationship of Mother's Attitude to Diarrhea in Toddlers in the Work Area of Pamatang Raya Health Center.

Mother's attitude	Diarrhea		Total		PV value
	f	%	f	%	
negative	7	66.2	47	66.2	0.04
Positive	4	33.18	24	33.18	
Total		100	71	100	

Based on table 6. above, the relationship between mothers' attitudes towards diarrheal disease in toddlers 1-5 years of age in the Pamatang Raya Community Health Center in Simalungun Regency in 2020 was obtained, from 47 (66.2%) respondents who had a negative attitude, and 24 (33.18 %) respondents who have a positive attitude,

Based on the results of the Chi-square statistical test, p value = $0.04 < (0.05)$. So it can be concluded that H_a is accepted, which means that there is no relationship between mother's knowledge and diarrhea

c. Relationship between Mother's Behavior and Diarrhea on Toddlers in the Work Area of Pamatang Raya Health Center.

Based on the results of the research, the relationship between mother's behavior and diarrhea in children under five can be seen in the following table:

Table. 7 Mother's Behavior Against Diarrhea in Toddlers in the Work Area Pamatang Raya Health Center.

mother's behavior	Diarrhea		Total		pValue
	f	%	F	%	
Well	32	45.1	32	45.1	0.03
Not enough	39	54.9	39	54.9	
Total	71	100	71	100	

Table. 7 above shows that of 32 (45.1%) respondents have good behavior towards diarrheal disease and 39 (54.9%) have poor behavior towards diarrheal disease.

Based on the results of statistical tests using the Chi Square test, it shows that p -value ($0.03 < (=0.05)$). So it can be concluded that H_a is accepted, which means that there is a relationship between mother's behavior towards diarrheal disease in toddlers in the Pamatang Raya Health Center work area.

4. CONCLUSION

Based on the results of research that has been carried out by researchers, the following conclusions are obtained:

1. There is a relationship between mother's knowledge of diarrheal disease in toddlers aged 1-5 years at the Pamatang Raya Public Health Center, Raya District, Simalungun Regency.



Based on the results of the Chi-square statistical test, p value = $0.02 < (0.05)$. So it can be concluded that H_a is accepted, which means that there is a relationship between mother's knowledge and diarrheal disease in toddlers (1-5) years in the Pamatang Raya Health Center Work Area.

2. There is a relationship between mother's attitude towards diarrheal disease in toddlers aged 1-5 years at the Pamatang Raya Health Center, Raya District, Simalungun Regency. Based on the results of the Chi-square statistical test, p value = $0.04 < (0.05)$. So it can be concluded that H_a is accepted, which means that there is a relationship between mother's knowledge and diarrheal disease in toddlers (1-5) years in the Pamatang Raya Health Center Work Area.
3. There is a relationship between mother's behavior towards diarrheal disease in toddlers aged 1-5 years at PAMATANG RAYA Public Health Center, Dolok Panribuan District, Simalungun Regency. Based on the results of the Chi-square statistical test, p value = $0.02 < (0.05)$. So it can be concluded that H_a is accepted, which means that there is a relationship between mother's behavior and diarrheal disease in toddlers (1-5) years in the Pamatang Raya Health Center Work Area.

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