Proceedings of International Conference
"Internationalization of Islamic Higher Education Institutions Toward Global Competitiveness"
Semarang, Indonesia – September 20th - 21th, 2018
Paper No. B-46

Analysis of Diarrhea in Toddlers in East Ciputat Primary Health Care in 2017

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Abstract - Diarrhea is a condition where the occurrence of defecation in the form of fluid or stool-shaped stool that occurs for more than three times a day and usually lasts for two days or more, often accompanied by spasms in the stomach. Diarrhea is a major killer in children and is still a public health problem especially in developing countries. Around the world in 2015 it was reported that 9% of all deaths of children under 5 years of age are due to diarrhea. This study aimed to determine the factors that associated with the incidence of diarrhea in infants. This study is quantitative analitic study with cross sectional design. The sample in this study is 1-2 years old toddlers totaling 102 taken using purposive sampling technique. Data analyzed conducted is univariate and bivariate by using chi square test. This study shows that there are significant relationship between maternal education (p=0,0005), maternal employment (p=0,0005), economic status (p=0,001), maternal milk status (p=0,005), and hand washing behavior (p=0,006) with incidence of diarrhea. Suggested to health workers to provide counseling to the community about breastfeeding, supplemental feeding of milk, use of bottles and hand washing with soap. And improve the program of diarrhea prevention.

Keywords: *diarrhea, toddler, milk status*

1. Background

Diarrhea is a condition where the occurrence of defecation in the form of fluid or stool-shaped stools that occur for more than three times a day and usually lasts for two days or more, often accompanied by spasms in the stomach[1].

Diarrheal diseases still often cause outbreak with a large number of sufferers in a short time. However, with the fast, precise and quality management of diarrhea, the death can be minimized. Diarrhea is the second biggest cause of under-five mortality in the world. This disease can be prevented and treated, according to data from the World Health Organization (WHO) there are about four billion cases of acute diarrhea each year with a mortality of 3-4 million per milliard of cases each year. Diarrhea is often regarded as a trivial problem, whereas at the global and national level facts show the opposite[2].

Diarrhea is a major killer in children around the world, in 2015 it was reported that 9% of all deaths of children under the age of five were due to diarrhea. This means more than 1,400 children die every day, and about 526,000 children per year. Most deaths from diarrhea occur in children younger than 2 years living in South Asia and Sub-Saharan Africa[3].

Diarrhea is a public health problem in developing countries such as Indonesia, as seen from the high morbidity and mortality. Diarrhea is an endemic disease in Indonesia, and is also a disease that has the potential to cause an outbreak which is often accompanied by death. In 2015 there were 18 outbreaks of diarrhea, spread across 11 provinces, 18 districts / cities, with 1,213 people and 30 deaths[4].

The incidence of diarrhea in children under five in Indonesia is 6.7% and the highest prevalence of diarrhea occurs in children aged 12-23 months. The five provinces with the highest incidence of diarrhea in toddlers were Aceh, Papua, DKI Jakarta, South Sulawesi and Banten[5]

Based on secondary data obtained from East Ciputat Primary Healthcare, it was noted that in 2016 there were 1181 cases of diarrhea that occurred in two villages, that are Rempoa as many as 663 cases, and Cempaka Putih as many as 518 cases of diarrhea.

Diarrhea that occurs suddenly and lacks treatment can have fatal consequences and even death, especially in infants and toddlers. This is because diarrhea can cause dehydration so that the body will become weak. If diarrhea has been successfully cured but occurs repeatedly, it will cause the child's weight to continue to decline. As a result, children will lack nutrients which inhibits their physical and brain growth. So that when adults children will have low productivity[6].

Based on the description above, the researchers are interested in conducting research on what factors are related to the incidence of diarrhea in toddlers in the work area of east Ciputat Primary Health Care in 2017.

2. Method

This study is a quantitative research with cross sectional design. This study was conducted in March 2017 in the work area of East Ciputat Primary Healthcare. The sample in this study is toddlers aged 1-2 years totaling 102 toddlers taken by purposive sampling. The analysis carried out in this study was unvaried and bivariate by using chi-quare with a value of α 0.05.

3. Result

Table 1. Distribution of Diarrhea Events in Toddlers in the Work Area of East Ciputat Primary Health Care in 2017

Diarrhea	Frequency	Persentase (%)
No	69	67,6
Yes	33	32,4
Total	102	100,0

From the table 1, shows that there are more toddlers who do not suffer from diarrhoea compared to those who experience diarrhoea , which is 67.6%.

Table 2. Distribution Of Respondent Characteristics in East Ciputat Primary Health Care in 2017

Variable	Frequency	Persentase (%)
Maternal Education		
Low	37	36,3
High	65	63,7
Total	102	100,0
Maternal employment		
Not work	66	64,7
Work	36	35,3
Total	102	100,0

Variable	Frequency	Persentase (%)
Economics Status		
< RMW	59	57,8
> RMW	43	42,2
Total	102	100,0
maternal milk status		
No	56	54,9
Yes	46	45,1
Total	102	100,0
hand washing behavior		
Bad	52	51,0
Good	50	49,0
Total	102	100,0

The analysis showed that 63.7% of mothers were highly educated. The maternal employment variable shows that 64.7% of mothers are not work. In the economic status variable shows that respondents who have less income than regional minimum wages are more than respondents who have income greater than the regional minimum wage that is equal to 57.8%. In the breast milk consumption status variable, it can be seen that the number of children who did not drink breast milk was more than those who still consumed breast milk, which was 54.9%. The variable hand washing behavior found that as many as 51% of respondents have bad behavior in hand washing habits.

Table 3. Relationship between Respondent Characteristics with Diarrhea on Toddlers in East Ciputat Primary Healthcare in 2017

Variables	Diarrhea Event				Total		P value
	No		Yes				
	N	%	n	%	N	%	
Maternal Education							
Low	14	38.7	23	62,5	37	100	0,0005
High	55	84,6	10	15,4	65	100	
Total	69	67,6	33	32,4	102	100	
Maternal Employment							
Not work	35	53,0	31	47,0	66	100	0,0005
work	34	94,4	2	5,6	36	100	
Total	69	67,6	33	32,4	102	100	
Economic Status							
< RMW	32	54,2	27	45,8	59	100	0,001
>RMW	37	56,0	6	14,0	43	100	
Total	69	67,6	33	32,4	102	100	
Maternal Milk Status							
No	31	55,4	25	44,6	56	100	0,005
Yes	38	82,6	8	17,4	46	100	
Total	69	67,6	33	32,4	102	100	
Hand Washing Behavior							
Bad	46	78,0	13	22,0	59	100	0,006
Good	23	53,5	20	46,5	43	100	
Total	69	67,6	33	32,4	102	100	

Based on the table 3. shows that 62.0% of children with low-educated mothers experience diarrhea. Analysis obtained p value = 0.0005 (p value <0.05) it can be concluded that there is a significant relationship between maternal education with the incidence of diarrhea in toddlers. In the maternal employment variable showed that the child whose mother did not work 47% experienced diarrhea. Analysis obtained p value = 0.0005 (p value <0.05) it can be concluded that there is a significant relationship between maternal employment with the incidence of diarrhea in toddlers. In the economic status variable shows that 45.0% of children with parents with low economic status experience diarrhea. The analysis shows that p = 0.001 (p value <0.05), it can be concluded that there is a significant relationship between economic status and the incidence of diarrhea in toddlers. The ASI consumption status variable shows that children who have not consumed breast milk experience diarrhea. Statistical analysis showed that p = 0.005 (p value <0.05), it can be concluded that there was a significant relationship between breastfeeding status and the incidence of diarrhea in toddlers. In the variable hand washing behavior showed that 22.0% of children from mothers who washed their hands badly experienced the incidence of diarrhea. obtained p value = 0.006 (p value <0.05) it can be concluded that there is a significant relationship between hand washing behavior and the incidence of diarrhea in toddlers.

4. Discussion

The results of the analysis on education variables obtained p = 0.0005 (p value <0.05) it can be concluded that there is a significant relationship between maternal education and the incidence of diarrhea in toddlers. Education as a work is a measure that is as valuable as socioeconomic status. People who have higher education are more oriented towards prevention of disease, knowing more about health problems, and have better health status. In women, the higher the level of education, the higher the knowledge of diarrhea will be compared to mothers who have low education, because one's knowledge can be obtained from high education.

So that highly educated mothers will understand more about diarrhea and are more aware of the health of their babies because in addition to being obtained from higher education, knowledge can also be obtained from social media. This study is not in accordance with the research conducted by Soentpiet (2015) which obtained the results of p = 0.146 which showed that there was no relationship between maternal education with diarrhea in toddlers[7].

The results of the research on job variables found that there was a significant relationship between maternal work with the incidence of diarrhea in toddlers, p = 0.0005 (p value <0.05). This study is accordance with the research conducted by Woldu et al. In 2016 which showed a relationship between maternal employment status with the incidence of diarrhea in children under the age of five[8]. However, this study is not in accordance with the study conducted by Primona, et al in 2013 which showed that there was no significant relationship between maternal employment with the incidence of diarrhea in toddlers[9].

Economic status is a variable that is often also seen in relation to morbidity or mortality, because it relates to the level of one's life. Economic status can

affect various aspects of life including health care, so it is not surprising that there are differences in morbidity or mortality between various social classes. So it is very clear that economic status is very influential in the occurrence of a disease. Where the incidence of a disease is more common in low-income people than in high-income people. The results showed that p = 0.001 (p value <0.05), it can be concluded that there is a significant relationship between economic status and the incidence of diarrhea in toddlers. This study is in accordance with research conducted by Woldu, et al. In 2016 which showed a relationship between economic status and the incidence of diarrhea in children under 5 years old[8].

The results of the analysis on the status of breast milk consumption obtained p = 0.005 (p value <0.05) it can be concluded that there was a significant relationship between breastfeeding status and the incidence of diarrhea in toddlers. This is consistent with research conducted by Henny (2015) who obtained p = 0.001 (p value <0.05) which means there is a significant relationship between breastfeeding and the incidence of diarrhea in infants[10]. This research is also consistent with the research conducted by Narzah, et al. In 2016 which stated that there was a relationship between breast nutrition with incidence of diarrhea in children under five[11]. different from the research conducted by Bahartha and Alezzi in 2015 which stated that there was no relationship between breast nutrition and the incidence of diarrhea in infants[12].

The presence of antibodies and macrophage cells in colostrum can provide protection against certain types of infections. Immunity to enteral infections, and parenteral infection at a lower level, are derived from antibodies. Therefore babies who are fully breastfed are rarely infected with infectious diarrhea or necrotizing enterocolitis. Because breast milk contains antibodies that can protect children against various diarrhea-causing bacteria such as shigella and V. Cholera . As the results of research conducted in the work area of East Ciputat Primary Health Care, toddlers who experience diarrhea are more experienced by children who no longer consume breast milk.

The hand is one media that can transmit various diseases in humans, especially in dirty hands. In this study, it was found that p = 0.006 (p value <0.05), it can be concluded that there is a significant relationship between hand washing behavior and the incidence of diarrhea in toddlers.

Hanifati, et al in 2016 also got the same results that p = 0.001 (p value <0.05). It can be concluded that there is a relationship between mother's hand washing behavior and the incidence of diarrhea in children under five. Its means that the hand washing behavior of mothers is one of the factors that can cause diarrhea in infants. Hand washing is one way to prevent disease transmission. Because every day the mother always conducts activities in her household. If the mother's hand is dirty, the toddler will be more susceptible to diarrhea because the germs can spread to the toddler through the mother's hand, especially if the mother does not wash her hands with soap before giving food to children[13].

5. Conclusion

From the results of research conducted in the work area of East Ciputat Primary Heath Care, it was found that the prevalence of children with diarrhea was 32.4%. Factors related to the incidence of diarrhea in infants are education,

employment, economic status, breastfeeding status, and hand washing. from these variables the most significantly related is maternal education and maternal employment with p value 0.0005.

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