



RELATED FACTORS OF DIARRHEA IN CHILDREN UNDER FIVE IN THE WORKING AREA OF PAMPANG COMMUNITY HEALTH CENTRE

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ABSTRACT

Diarrheal problem among under five children at Pampang sub-district was the highest compared to other sub-districts in Makassar City. The aim of this research was to evaluate the correlation between environmental, maternal behavior factor, and the incidence of diarrhea in infant in the working area of Pampang Community Health Center (Puskesmas). This research was an observational analytic using cross sectional study design with total samples were 64 infants (12-59 months) obtained by simple random sampling technique. This research was conducted by interview and microbiological examination (E.coli) contained in the clean water. The result of this research showed that diarrhea event was 43 children (67,2%). The variable related to incidence of diarrhea in infants were family latrine facilities ($p=0,018$), waste management ($p=0,049$), and healthy hand washing behavior ($p=0,011$). This research suggested that Puskesmas Pampang should make efforts to improve knowledge for society through health education such as good waste management procedure, healthy toilet in the household, and hand washing with soap.

KEYWORDS: Diarrhea, Environment, Mother Behavior, Infants.

INTRODUCTION

Diarrhea is a condition where the feces become watery, and could mix with blood and / lender.^[1] Diarrhea is still the main cause of infant mortality in Indonesia. The incidence of infant diarrhea in Indonesia is 6.7%.^[2] Infant Mortality Rate (AKABA) which is according to the Census Population Survey (SUPAS) 2015 in Indonesia amounted to 26.29 per 1,000 live births.^[3]

According to the data from Department of Health of South Sulawesi Province in 2014, the highest number of reported infant mortality was in Makassar city with 236 cases. AKABA has increased for the last 3 years in Makassar City. AKABA = 1.79 / 1,000 KH In 2012 increased to 3.34 / 1,000 KH in 2013, and in 2014 was 3.86 / 1,000 KH.5

The data from Department of Health in Makassar City in 2015, Pampang Puskesmas was the first rank of the highest diarrhea case. Diarrhea case of infants at Pampang Puskesmas in 2014 was 387 infants. It increased to 641 infants in 2015.^[4,5] Not only did high diarrhea cases but also the number of infant mortality in 2014 was 6 infants which was the highest case from

some puskesmas in the work area of Panakkukang sub-district.^[6]

AKABA describes the level of children health problem and environmental factor that affect the health infants. Good sanitation is an important element that supports human health. Sanitation is related to environmental health that affect the public health status.^[7] In this case, the researcher is interested to know the factors related to incidence of diarrhea in infants in the working area of Pampang Puskesmas in Makassar city in 2017 especially, to analyze the correlation between environmental factors and mother behavior factor with the diarrhea case in infants.

RESEARCH METHOD

The type of this research used in this study is an observational analytic study using a cross sectional study design. The research was conducted in the working area of Pampang Puskesmas in Makassar city. The population of this research is all infants who reside in the working area of Pampang Puskesmas in Makassar City. The sample of this research took 64 respondents obtained by simple random sampling technique. Processing and analyzing data were processed by SPSS program

consisting of univariate analysis to know data distribution through frequency distribution and bivariate analysis using Chi Square / Fisher test with 95% of accurate level. This research was conducted by interview, observation, and laboratory examination.

RESULTS AND DISCUSSION

The incidence of diarrhea in infants is a diarrheal disease experienced by infants in the past year. Based on Table 1, it can be seen that more infants suffering from diarrhea in the past year which are 43 infants (62,7%) and only 10 infants (32,8%) who do not suffer from diarrhea disease.

Table 1: Diarrheal events in the working area of Pampang Puskesmas.

Diarrhea status	n	%
Diarrhea	43	62.7
Absence of diarrhea	21	32.8
Total	64	100.0

Based on Table 2, it can be seen that most respondents in work area of Pampang Puskesmas having clean water source that do not meet requirement are 7 respondents (10.9%). Meanwhile, based on physical quality variable of clean water that does not meet the requirement is 1 respondent (1.6%). The Variable of clean water of microbiological quality which does not requirement is 6 respondent (9.4%).

Table 2: Environmental conditions of children’s household in the working area of Pampang Puskesmas.

Variable	n	%
Source of clean water		
Qualified	57	89.0
Not qualified	7	11.0
Physical quality of clean water		
Qualified	63	98.4
Not qualified	1	1.6
Microbiological quality of clean water		
Qualified	58	90.6
Not qualified	6	9.4
Household latrines		
Qualified	39	54.7
Not qualified	25	45.3
Household trash		
Qualified	9	14.1
Not qualified	55	85.9
Sewerage channel		
Qualified	1	1.6
Not qualified	63	98.4
Total	64	100.0

Based on variable of family latrine facilities, it can be seen that more respondents who have family latrine facilities that do not meet requirement are 35 respondents (54.7%), variables of family waste management are 55 respondents (85,9%) and based on variables of sewerage, more respondents having SPAL that do not meet requirement are 63 respondents (98,4%).

Mother behavior factor include drinking water management, drinking water storage, and hand washing with soap. Based on Table 3, it can be seen that more respondents managing drinking water that meet the requirement are 62 respondents (96.9%). Based on variable of drinking water storage of infants, more respondents having drinking water storage that meet the requirements are 63 respondents (98.4%) while, based on variable of hand washing behavior with soap, infants’ mother who do not meet the requirements are 54 (84.4%).

Table 3: Behavior of children’s mother in the working area of Pampang Puskesmas.

Variable	n	%
Drinking water management		
Qualified	62	96.9
Not qualified	2	3.1
Drinking water storage		
Qualified	63	98.4
Not qualified	1	1.6
Handwashing behavior		
Qualified	54	15.6
Not qualified	10	84.4
Total	64	100.0

Analysis of the correlation between environmental factor and incidence of diarrhea in infants in the working area of Pampang Puskesmas can be seen in Table 4.

Table 4: Environmental factors associated with diarrhea status among children under five years.

Environmental factors	Diarrhea				Total		p
	Yes		No		n	%	
	n	%	n	%			
Source of clean water							
Qualified	37	57.8	20	31.2	57	89.0	0.410
Not qualified	6	9.4	1	1.6	7	11.0	
Physical quality of clean water							
Qualified	42	65.6	21	32.8	63	98.4	1.000
Not qualified	1	1.6	0	0.0	1	1.6	
Microbiological quality of clean water							
Qualified	38	59.4	20	31.2	58	90.6	0.654
Not qualified	5	7.8	1	1.6	6	9.4	
Household latrines							
Qualified	19	29.7	16	25.0	39	54.7	0.018
Not qualified	24	37.5	5	7.8	25	45.3	
Household trash							
Qualified	3	4.7	6	9.4	9	14.1	0.049
Not qualified	40	62.5	15	23.4	55	85.9	
Sewerage channel							
Qualified	1	1.6	0	0.0	1	1.6	1.00
Not qualified	42	65.6	21	32.8	63	98.4	
Total	43	67.2	21	32.8	64	100.0	

Based on Table 4, it can be seen that the result of statistical test shows the grade of $p = 0,410$ ($p > 0,05$), for the source of clean water, $p = 1,000$ ($p > 0,05$) for variable of clean water quality, $p = 0,654$ ($p > 0,05$) for variable of microbiological quality of clean water, $p = 0,018$ ($p < 0,05$) for variable of family latrine facility, $p = 0,049$ ($p < 0,05$) for variable of household waste management, and $p = 1,000$ ($p > 0,05$) for variable of sewerage disposal. Thus, it can be concluded that there is a significant correlation between family latrine facility and household waste management with the incidence of diarrhea in infants in the working area of Pampang Puskesmas in Makassar City.

The data obtained from infants having family latrine facilities that do not meet the requirement and get diarrhea is 24 infants (37.5%). This is because the use of latrine with a septic tank is <10 meters away from well. In addition, the used latrine provides a clean water that is accommodated without a lid inside the toilet invites vectors or insects.

This research is in line with Siregar's study (2016) showing that there is a significant correlation between family latrine ($p = 0,004$) and incidence of diarrhea in infants at Pintu Angin area, Sibolga Hilir urban village, north Sibolga sub-district in Sibolga city.^[8] According to Sharfina et al (2017)^[9] explains that infants having unqualified latrine availability risk at 5.714 times greater suffer from diarrhea rather than infants who have the qualified toilet availability.

The data obtained show that infants who experience more incidence of diarrhea is infants having unqualified

household waste management which are 40 infants (62.5%). This is because most infants having a trashcan without a lid that allows transmission of diarrhea through the vector of fly. In addition, there are still families of infants who throw rubbish in inappropriate places which are 4 infants (6.3%).

This research is in line with Tauso and Azizah (2013)^[10] showed that there was a significant correlation between waste disposal facility and incidence of diarrhea ($p = 0,003$) in infants in Bena Village. Dini dkk (2013) mentioned that respondents with poor waste management have a risk 3.3 times incidence of diarrhea in infants compared to respondents with good waste management.

Table 5: Maternal behavior factors associated with diarrhea status among children under five years.

Maternal behavior	Diarrhea				Total		p
	Yes		No		n	%	
	n	%	n	%			
Drinking water management							
Qualified	42	65.6	20	31.2	62	96.9	1.00
Not qualified	1	1.6	1	1.6	2	3.1	
Drinking water storage							
Qualified	42	65.6	21	32.8	63	98.4	1.00
Not qualified	1	1.6	0	0.0	1	1.6	
Handwashing behavior							
Qualified	3	4.7	7	10.9	54	15.6	0.11
Not qualified	40	62.5	14	21.9	10	84.4	
Total	43	67.2	21	32.8	64	100.0	

As shown in Table 5, the statistical test shows the grade of $p = 1,000$ ($p > 0,05$) for variable of drinking water management, $p = 1,000$ ($p > 0,05$) for variable of drinking water storage, and $p = 0,11$ ($p > 0,05$) for hand washing with soap. Thus, it can be concluded that there is not significant correlation between drinking water management, drinking water storage, and hand washing with soap in infants in the working area of Pampang Puskesmas in Makassar city.

CONCLUSION

Based on the results of the research can be seen that infants experience incidence of diarrhea in the past year in the work area of Pampang Puskesmas are 62.7%. Based on bivariate data, it can be seen that there is a significant correlation between family latrine facilities ($p = 0,049$) and incidence of diarrhea in infants in the working area of Pampang Puskesmas in Makassar City and there is not significant correlation between water source ($p = 0,410$) physical clean water ($p = 1,00$), microbiological quality of clean water ($p = 0,654$), sewerage ($p = 1,00$), drinking water management ($p = 1,00$), drinking water storage ($p = 1,00$), and hand washing with soap ($p = 0,11$) with incidence of diarrhea in infants in working area of Pampang Puskesmas in Makassar city.

REFERENCE

1. Kemenkes RI, *Situasi Diare di Inodesia*, Buletin Jendela Data dan Informasi. Kementerian Kesehatan RI, 2011.
2. Kemenkes RI, *Riset Kesehatan Dasar (Riskesdas) 2013*, Jakarta: Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan Republik Indonesia, 2013.
3. Kemenkes RI, *Profil Kesehatan Indonesia Tahun 2015*, Jakarta: Kementerian Kesehatan RI, 2016.
4. Puskesmas Pampang, *Profil Kesehatan Puskesmas Pampang Kota Makassar Tahun 2014*, Makassar: Puskesmas Pampang, 2015.
5. Puskesmas Pampang, *Profil Kesehatan Puskesmas Pampang Kota Makassar Tahun 2015*, Makassar: Puskesmas Pampang, 2016.

6. Dinas Kesehatan Kota Makassar, *Profil Kesehatan Kota Makassar Tahun 2014*, Makassar: Dinas Kesehatan Kota Makassar, 2015.
7. Dini, F., Machmud, R. & Rasyid, R., Hubungan Faktor Lingkungan dengan Kejadian Diare Balita di Wilayah Kerja Puskesmas Kambang Kecamatan Lengayang Kabupaten Pesisir Selatan Tahun 2013. *Jurnal Kesehatan Andalas*, 2013; 4(2).
8. Siregar, W., Hubungan Sanitasi Lingkungan dan Personal Hygiene Ibu dengan Kejadian Diare pada Balita di Lingkungan Pintu Angin Kelurahan Sibolga Hilir Kecamatan Sibolga Utara Kota Sibolga Tahun, 2016.
9. Sharfina, H., Fakhriadi, R. & Rosadi, D., Pengaruh Faktor Lingkungan dan Perilaku terhadap Kejadian Diare pada Balita di Wilayah Kerja Puskesmas Sungai Tabuk Kabupaten Banjar. *Journal of Public Health Publications Indonesia*, 2017; 3(3).
10. Tauso, S.A. & Azizah, R., Hubungan Sanitasi Dasar Rumah dan Perilaku Ibu Rumah Tangga dengan Kejadian Diare pada Balita di Desa Bena Nusa Tenggara Timur. *Jurnal Kesehatan Lingkungan*, 2013; 7(1): 1–6.