



Association between Environmental Factors and Incidence of Diarrhea Among Toddlers in the Working Area of Ambal I Health Center, Kebumen, Center of Java, Indonesia

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Abstract— About 1.7 billion children suffer from diarrhea and diarrhea causes 525,000 toddlers died each year. In 2021 diarrhea in toddlers as much as 34.2% of 357 cases of diarrhea, and in the work area of Ambal I health center for the last 3 years cases of diarrhea in toddlers have not shown a decrease. The purpose of this study was to determine the association between environmental factors and the incidence of diarrhea in toddler in the working area of Ambal I Health Center in 2022. This type of research was analytic observational with a cross sectional approach. The population in this study were toddlers aged 12-59 months who lived in the working area of Ambal I Health Center, Ambal District, Kebumen Regency in 2022. The number of samples taken was 67 samples using the proportional random sampling method. The association test was carried out using the Chi-Square test. The results of this study indicate that there were no significant association between clean water sources ($p=0.220$), faecal disposal facilities ($p=0.717$), waste water disposal facilities ($p=0.103$), waste disposal facilities ($p=0.683$) and the type of floor of the house ($p=0.610$) with the incidence of diarrhea in toddler. Environmental factors are not related to the incidence of toddler diarrhea in the working area of Ambal I Health Center, Kebumen, Center of Java, Indonesia in 2022.

Keywords— environment, diarrhea, toddler, Health Center.

I. INTRODUCTION

Globally, children suffering from diarrheal diseases each year recorded approximately 1.7 billion and resulted in 525,000 toddlers died due to diarrhea. Toddlers are a vulnerable group which if exposed to diarrhea and do not get the right help can lead to death. Diarrheal diseases also play a major role in the case of malnutrition in toddler (WHO, 2017). The incidence of diarrheal disease in Indonesia at all ages amounted to 3.5% while in toddlers amounted to 6.7% (Christy, 2014).

Diarrheal diseases are caused by various influencing factors, namely environmental conditions, public health

services, behavior, nutrition, population, education, knowledge, social, economic and others. Diarrheal diseases themselves are caused by about 20-30% by Rotavirus viruses, by 20-30% by E. coli, by 1-2% by Shigella sp. and less than 1% by the parasite Entamoeba histolytica (Maidartati and Anggraeni, 2017).

Environmental factors are factors that have a crucial role in relation to the emergence of various diseases. Poor environmental conditions will also affect a person's health and make it easier for the person to be exposed to diseases such as diarrhea, malaria, measles, hepatitis, dengue hemorrhagic fever and so on, so that efforts are needed to improve the environment to eradicate infectious diseases

(Febrianti, 2019). These environmental factors can be seen from the presence of polluted clean water, poor environmental sanitation, poor hygiene and the use of latrines, cleanliness of dwellings that are not maintained and poor waste water disposal facilities (Fathia, 2015).

Research Yasin, et al (2018), states that there was an association between environmental factors (landfills, latrine types and drinking water sources) with diarrhea toddlers ($p = 0.028$). Similar research conducted by Yustati (2021), it was found that there was a meaningful association between clean water facilities ($p = 0.000$), latrine availability ($p = 0.000$), and SPAL ($p = 0.000$) with toddler diarrhea. Another study was conducted by Saputri & Astuti (2019) and it is known that the type of floor, the type of stool disposal and the source of drinking water are factors causing toddlers to suffer from diarrhea (OR = 4,035; OR = 4,218; OR = 5,716).

Based on preliminary studies and data from Ambal I Health Center, Ambal sub-district, Kebumen Regency, it is known that cases of diarrhea both among all ages and toddlers have decreased from previous years, but the decline has not been significant. Data from Ambal I Health Center showed that in 2021, as many as 34.2% or as many as 122 cases out of 357 cases of diarrhea in the working area of Ambal I Health Center were cases of diarrhea in toddlers.

Environmental health data according to Ambal I Health Center, Kebumen, Center of Java, Indonesia in 2021, namely the community has 93.2% coverage of clean water access, 95.9% coverage of access to healthy latrines, 93.1% coverage of clean water access, 83% coverage of Healthy Homes and the number of families who are still defecate in open as much as 1.5%.

According to preliminary studies that have been conducted, most people in the area of Ambal I Health Center still throw garbage directly on the ground and then burned as much as 100% (16 of 16 respondents), have clean water sources have not qualified as much as 37.5% (6 of 16 respondents), have latrines have not qualified as much as 56.3% (9 of 16 respondents), waste water disposal facilities have not qualified as much as 43.8% (7 of 16 respondents), and there are still 18.8% (3 of 16 respondents) whose floors are not waterproof.

Based on the above background, the researchers were interested in researching "Association Between Environmental Factors and Incidence of Diarrhea Among Under-Five Years Children in The Working Area of Ambal I Health Center, Kebumen, Center of Java, Indonesia in 2022".

II. METHOD

This study was conducted in the working area of Ambal I Health Center, Kebumen, Center of Java, Indonesia in April – May 2022. The Ethical Clearance no 187/EA/KEPK-FKM2022 approval from Health Research Ethic Committee, Faculty of Public Health Diponegoro University. The research design used was a cross sectional study. The independent variables studied were clean water sources, fecal disposal facilities, waste water disposal facilities, garbage disposal facilities, and type of house floor, while the dependent variable studied was the incidence of diarrhea toddlers.

2.1 Population

The population used in this study was mothers who had toddlers aged 12 to 59 months in Ambal 1 Health Center working area in 2022. The population in this study amounted to 1656 toddlers.

2.2 Sample

Sampling was done by proportional random sampling. Sampling technique is used when the elements or members of a population is not uniform/ homogeneous and stratified proportionally (Sidik et. al., 2016). The number of samples is calculated using the formula according to Lemeshow et. al. (1991)

$$n = \frac{Nz^2p(1-p)}{d^2(N-1) + z^2p(1-p)}$$

Description,

n = sample size

N = large population

z = Z value at $\alpha=90\%$ ($z = 1.96$)

p = proportion of diarrhea in toddlers (according to Oktariza et. al., (2018), the proportion of diarrhea in toddlers in Indonesia, amounting to 20% or 0.2)

d = precision (10% or 0.1)

By using the formula above, it can be obtained the calculation of the minimum sample in this study of

$$n = \frac{1656 \cdot (1.96)^2 \cdot 0.2 \cdot (1 - 0.2)}{(0.1)^2 \cdot (1656 - 1) + (1.96)^2 \cdot (0.2) \cdot (1 - 0.2)}$$

$$n = 59,3 \approx 60$$

From the above calculation, obtained a minimum number of samples as many as 60 samples. Then do the calculation with an estimated drop out of 10% to obtain the number of samples as many as 67 samples. The results are then calculated proportions to get the number of samples per village.

Formula proportional random sampling (Ikrimah, 2018) :

$$n = \frac{\text{number of toddlers per village}}{\text{jumlah total balita total number of toddlers}} \times \text{number of samples}$$

Table 1. The number of samples per village in the working area of Ambal I Health Center Kebumen, Center of Java, Indonesia in 2022

No.	Village	Number of toddlers	Number of samples per village
1	Entak	111	4
2	Plempukankembaran	65	3
3	Kenoyojayan	82	3
4	Ambalresmi	172	7
5	Kaibonpetangkuran	123	5
6	Kaibon	121	4
7	Sumberjati	94	4
8	Blengorwetan	89	4
9	Blengorkulon	102	4
10	Benerwetan	79	3
11	Benerkulon	118	5
12	Ambalkliwonan	115	5
13	Pasarsenen	94	4
14	Pucangan	80	3
15	Ambalkebrek	66	3
16	Gondanglegi	145	6
Total		1656	67

2.3 Data analysis

The data analysis were univariate and bivariate analysis. Univariate analysis in the form of presentation of frequency distribution data on environmental factors, (clean water sources, fecal disposal facilities, waste water disposal facilities, garbage disposal facilities and type of house floor). Bivariate analysis presents data on the results of the association test using chi-square test between environmental factors and the incidence of toddler diarrhea.

III. FINDINGS AND DISCUSSION

3.1 Overview of research sites

The working area of Ambal I Health Center is in Ambal Sub-District, Kebumen regency, Central Java. This area consists of 16 assisted villages namely Entak, Plempukankembaran, Kenoyojayan, Ambalresmi, Kaibonpetangkuran, Kaibon, Sumberjati, Blengorwetan, Blengorkulon, Benerwetan, Benerkulon, Ambalkliwonan,

Pasarsenen, Pucangan, Ambalkebrek and Gondanglegi. Geographically, this region is a lowland area with an average altitude of 7.5 meters above sea level and a total area of 35,490 km². The smallest village area was Plempukankembaran village was 1.1 km² and the most extensive village area was Entak village which was 4.549 km². Land use in the working area of Ambal I Health Center is 55% dry land consisting of residential building land and moorland, while the other 45% is paddy land.

The total population in the working area of the Ambal I Health Center in 2020 was 33,561 people where this number increased from the previous year, namely in 2019 which had a population of a total of 33,373 inhabitants. The distribution of the population is uneven, because the population concentration varies from village to village. The level of population density has increased in 2020 by 950 per 1 km² where previously it was 946 per 1 km² in 2019.

3.2 Univariate analysis

Univariate analysis aims to determine the frequency distribution of the variables used in this study. Distribution of characteristics of mothers and toddlers include mother's age, mother's education, mother's occupation, family income, toddler's age, toddler's gender, and toddler's

nutritional status while the sample characteristics include clean water sources, fecal disposal facilities, waste water disposal facilities, garbage disposal facilities and types of home floors and distribution of diarrhea frequency in the working area of Ambal I Health Center.

Table 2. Frequency distribution of mothers and toddler characteristics in the working area of Ambal I Health Center, Kebumen, Center of Java Indonesia, in 2022

No.	Mothers and toddler characteristics	Frequency (f)	%
1	Mother's age (year)		
	Mean	32,15	
	Minimum	20	-
	Maximum	47	
	Std. Deviation	6,165	
2	Mother's education		
	Low		
	Primary school	11	16,4
	Junior high school	33	49,3
	High		
	Senior high school	19	28,4
	Bachelor	4	6,0
3	Mother's occupation		
	Work		
	Farmer	3	4,5
	Trader	3	4,5
	Village apparatus	2	3,0
	Not Work		
	Housewife	59	88,1
4	Family income		
	< Regional minimum wage (RMW)	54	80,6
	≥ Regional minimum wage (RMW)	13	19,4
5	Toddler's age (Month)		
	Mean	30,93	
	Minimum	12	-
	Maximum	58	
	Std. Deviation	12,008	
6	Toddler's gender		
	Male	26	38,8
	Female	41	61,2
7	Toddler's nutritional status		

Mean	-0,67	
Minimum	-3,40	-
Maximum	2,13	
Std. Deviation	1,237	

Based on Table 2, it was known that of the 67 respondents of the study, the age of the mother who became the respondent was a minimum of 20 years and a maximum of 47 years, the majority of respondents' education is Junior High School (33 or 49.3%), the majority of respondents' jobs were housewives or not working (59 or 88.1%), the majority of respondents' family income was below regional minimum wage of Kebumen

Regency (54 or 80.6%), the age of respondents' toddlers was a minimum of 12 months and a maximum of 58 months, the majority of the gender of toddlers is female (41 or 61.2%) and the majority of the nutritional status of toddlers was good nutritional status as much as 56 (83.6%) with a minimum z-score value of -3.40 and a maximum of 2.13 and the standard deviation value of 1,237.

Table 3. The incidence of diarrhea in toddler in the working area of Ambal I Health Center Kebumen, Center of Java Indonesia, in 2022

No.	Incidence of diarrhea	Frequency (f)	%
1	Diarrhea	37	55,2
2	Not diarrhea	30	44,8

Based on table 3. it was known that toddlers who have diarrhea in the last 3 months are 37 (55.2%) cases, while toddlers who do not have diarrhea are 30 (44.8%) cases.

disposal facilities, garbage disposal facilities, and type of house floor) with the dependent variable (incidence of diarrhea toddlers) in the working area of Ambal I Health Center. Association analysis was performed using The Chi-Square test.

3.3 Bivariate analysis

Bivariate analysis in this study aims to determine the association between variables of environmental factors (clean water sources, fecal disposal facilities, waste water

Table 4. Test results of environmental factors that affect the incidence of diarrhea in toddler in the working area of Ambal I Health Center, Ambal District, Kebumen Regency in 2022

No.	Variables	Diarrhea		p - value	RP (95%CI)
		Yes	No		
1	Clean water sources				
	Unprotected	24 (61.5%)	15 (38.5%)	0.220	1.85 (0.69 – 4.94)
Protected	13 (46.4%)	15 (53.6%)			
2	Fecal disposal facilities				
	Unqualified	25 (56.8%)	19 (43.2%)	0.717	1.21 (0.44 – 3.32)
Qualified	12 (52.2%)	11 (47.8%)			
3	Waste water disposal facilities				
	Unprotected	30 (61.2%)	19 (38.8%)	0.103	2.48 (0.82 – 7.52)
Protected	7 (38.9%)	11 (6.1%)			
4	Garbage disposal facilities				
	Unqualified	35 (54.7%)	29 (45.3%)	0.683	0.60 (0.05 – 6.99)
Qualified	2 (66.7%)	1 (33.3%)			
5	Type of house floor				
	Not waterproof	8 (61.5%)	5 (38.5%)	0.610	1.38 (0.40 – 4.76)
Waterproof	29 (53.7%)	25 (46.3%)			

Table 4. showed that the results of the association test using Chi-Square Test between environmental factors (clean water sources, fecal disposal facilities, waste water disposal facilities, garbage disposal facilities, and type of house floor) with the incidence of diarrhea obtained p-value of more than 0.05 ($p\text{-value} > 0.05$). This indicates that environmental factors do not have a meaningful association with the incidence of diarrhea in toddlers in Ambal I Health Center working area in 2022.

3.4 The association of clean water sources with the incidence of diarrhea

This study shows that of the 67 respondents studied there are respondents who have a protected source of clean water as many as 28 (41.8%) respondents, while respondents who have a source of clean water is not protected as many as 39 (58.2%) respondents. A protected source of clean water is when it is protected from the risk of contamination, such as water from pumps, Springs and boreholes and the distance between the water source and the fecal reservoir is more than 10 meters (Yasin, 2018). Unprotected sources of clean water because they are not protected from the risk of pollution, such as water from rivers, dug wells, and rainwater reservoirs and the distance of clean water sources with fecal reservoirs is less than 10 meters (Yasin, 2018). Respondents used drilled wells (45 or 67.2%) and dug wells (22 or 32.8%) as their source of clean water. Wells of respondents who meet the requirements of a distance of more than 10 meters from the reservoir of feces as many as 39 (58.2%), while others have a distance of less than 10 meters as many as 28 (41.8%) respondents.

There was a close association between water sources and sources of solid waste pollution and waste. The quality of clean water sources is influenced by the presence of pollution sources that are <10 meters away, such as household garbage disposal, latrine disposal, garbage disposal and animal cages. Various chemicals or microorganisms, especially pathogens of diarrheal diseases contained in wastewater or waste waste will flow and seep into the surrounding water sources. It will make clean water not good quality both in terms of biological, physical and chemical quality. The condition of such a water source if used for drinking water will certainly make water as a medium for the entry of pathogenic microorganisms into the body (Oktariza et.al., 2018).

The results showed that of the 67 respondents who use clean water sources are not protected there are 24 (61.5%) toddlers affected by diarrhea respondents while respondents who use clean water sources are protected there are 13(46.4%) toddlers affected by diarrhea. $RP=1.85$, H_0 was accepted, which means there was not

association between clean water sources and the incidence of diarrhea in toddler in the working area of Ambal I Health Center. The results of this study were in line with research conducted by Kamilla et al (2012).

The number of toddlers affected by diarrhea is higher in respondents who have unprotected clean water sources compared to respondents whose clean water sources are protected. This does not make the benchmark that clean water sources and the incidence of diarrhea toddlers have a significant association. This condition occurs because the clean water used as drinking water by the respondents is not consumed directly. Clean water taken from the well is then cooked/boiled until boiling and stored in a closed and clean place. Respondents who cook water before drinking as many as 63 (94%) people while the remaining 4 (6%) people do not cook drinking water. Boiling drinking water is related to the occurrence of diarrhea where boiling drinking water will reduce the contamination of germs in the water (Putra, 2014).

3.5 The association of fecal disposal facilities with the incidence of diarrhea

This study shows that of the 67 respondents studied there are respondents who have a means of disposal of feces qualified as many as 23 (34.3%) respondents, while respondents who have a means of disposal of feces do not qualify as many as 44 (65.7%) respondents. Qualified means of disposal of feces is if it has its own latrine, latrine has a septic tank with a distance of more than 10 meters with a source of clean water, the type of goose neck latrine, easy to maintain, and has a roof and wall building (Yasin, 2018; Oktariza, 2018). Means of disposal of feces respondents who do not meet the requirements due to the distance septic tank with a source of clean water less than 10 meters (28 or 41.8% of respondents) and do not have their own latrines (7 or 10.4% of respondents). Respondents who do not have their own latrines usually use latrines chapter brothers/hitchhiking as many as 2 (3.0%) respondents and chapter in the latrine as many as 5 (7.5%) respondents. The type of latrine used by respondents was goose neck as many as 62 (92.5%) units and *cubluk* (pit used as a toilet) as many as 5 (7.5%). Toddler habits of respondents when defecating in the toilet as many as 27 (40.3%) toddlers, while others defecate carelessly or not in the toilet as many as 40 (59.7%) toddlers.

Fecal disposal facilities with unqualified conditions can cause pollution of the surrounding environment, especially pollution due to human waste. Environment polluted by human feces, will result in increased transmission of diseases such as diarrheal diseases. The process of transmission of diarrheal diseases due to unqualified

means of disposal of feces is the bacteria that cause diarrhea that moves from feces to other people. It can occur through various media such as soil, water and insects which then contaminate food/ drinks (Sidhi et. al., 2016).

The results of this study showed that of the 67 respondents who use means of stool disposal does not meet the requirements there are as many as 25 (56.8%) toddlers affected by diarrhea respondents while respondents who use means of stool disposal meets the requirements there are as many as 12 (52.2%) toddlers affected by diarrhea respondents with a value of $RP = 1.21$ so that H_0 was accepted, which means there was not association between stool disposal facilities and the incidence of diarrhea in toddler. Means of feces disposal was not a risk factor for diarrhea in working area of Ambal I Health center. The result of this study was not in line with the research conducted by Yasin et al (2018) and Workie et.al (2019) which states that latrine conditions have a meaningful association with the incidence of diarrhea in toddlers.

Diarrhea in toddlers with unqualified means of stool disposal does have a higher number than diarrhea in toddlers with qualified means of stool disposal. This does not make the benchmark that the means of disposal of feces has a meaningful association with the incidence of diarrhea toddlers because as has been explained in theory H.L.Blum that health is influenced by 4 factors, not only environmental factors but other factors such as Behavior, Health Services and genetic (Saputri and Astuti, 2019). Diligent behavior of washing hands after pooping (67 or 100% of respondents wash their hands with soap after pooping or cleaning toddlers when finished pooping) can reduce the risk of diarrhea. One effective way that is easy to do to prevent disease transmission as early as possible is to wash your hands with soap because washing your hands can break the chain of disease transmission (Azhar et.al., 2014).

3.6 The association of wastewater disposal facilities with the incidence of diarrhea

This study shows that of the 67 respondents studied, there are respondents who have protected wastewater disposal facilities, namely as many as 18 (26.9%) respondents, while respondents who have unprotected wastewater disposal facilities, namely as many as 49 (73.1%) respondents. Means of waste water disposal that meets the requirements is if the means is protected by pipes or cement (closed), does not contaminate surface water, is not infested by disease-causing insects, does not emit foul odors and does not flood/inundate the surrounding environment. Waste water disposal facilities are not protected because the facilities are made of

perforated soil and not covered so that it can pollute clean water and the surrounding environment (Nurnaningsih et.al., 2017).

Unprotected means of wastewater disposal can lead to pollution of the surrounding environment. This can make waste water disposal facilities as a medium of transmission of diarrheal diseases. The process of transmission of diarrheal diseases due to unprotected waste water disposal facilities is the bacteria that cause diarrhea that moves from waste water to other people. It can occur through various media such as water, soil and disease vectors which then contaminate food/ drinks. If someone eats/ drinks contaminated food / drink will cause someone to experience diarrhea (Sidhi et.al., 2016).

The results showed H_0 was accepted, which means there was not association between wastewater disposal facilities and the incidence of diarrhea in toddler in the working area of Ambal I Health Center in 2022. The result of this study was in line with research conducted by Samiyati et al (2019).

Toddler diarrhea was more common in respondents with unprotected wastewater disposal facilities than toddler diarrhea in respondents with protected wastewater disposal facilities. Unprotected wastewater disposal means can contaminate water sources and the soil surface (Taosu and Azizah, 2013). Contaminated water from wastewater can make water contaminated with diarrheal germs and when consumed by humans can cause diarrhea (Nurnaningsih et.al., 2017). Waste water disposal facilities in the working area of Ambal I Health Center have estuaries far enough from water sources and drinking water cooked first by respondents to boil before consumption so that it can reduce the risk of developing diarrheal diseases.

3.7 The association of garbage disposal facilities with the incidence of diarrhea

This study shows that of the 67 respondents studied, there are respondents who have qualified garbage disposal facilities as many as 3 (4.5%) respondents, while respondents who have unqualified garbage disposal facilities as many as 64 (95.5%) respondents. Qualified garbage disposal facilities are closed, waterproof and regularly cleaned (Langit, 2016). Garbage disposal facilities that do not meet the requirements because the facilities are not closed and not waterproof. Community behavior that supports garbage disposal facilities does not meet the requirements, namely not sorting waste between organic waste and inorganic waste. The majority of respondents did not do waste sorting as many as 46 (68.7%) people, while others as many as 21 (31.3%) respondents did waste sorting.

Garbage thrown at random or does not meet health standards will cause environmental pollution and have a negative impact on human health such as increasing the spread of diarrheal diseases. Garbage disposal facilities that do not meet healthy standards can also interfere with comfort such as causing unpleasant odors and unsightly views. Efforts to reduce the risk of negative impacts of environmental pollution due to waste, waste management must be done properly, including providing a closed and impermeable trash can (Taosu and Azizah, 2013).

The results of this study showed that H0 was received, which means there was not association between garbage disposal facilities and the incidence of diarrhea in toddler in the working area of Ambal I Health Center in 2022. The result of this study was in line with research conducted by Langit (2016) and Oktariza et al (2018).

Many toddlers affected by diarrhea is higher in respondents who have unqualified garbage disposal facilities compared to respondents who are qualified garbage disposal facilities. This does not make the benchmark that garbage disposal facilities and the incidence of diarrhea in infants have a significant association. This condition is suspected because respondents routinely burn household waste generated in the home environment so that respondents do not let the waste left or accumulate long inside or outside their homes. The habit of respondents routinely burning garbage will reduce the potential for pollution due to waste such as pollution of clean water sources because there is no organic waste/wet. This can prevent the carrier vector of diarrheal disease agents from transmitting diarrheal disease.

3.8 The association of type of house floor with the incidence of diarrhea

This study shows that of the 67 respondents studied, there are respondents who have waterproof house floors, namely as many as 54 (80.6%) respondents, while respondents who have non-waterproof house floors, namely as many as 13 (19.4%) respondents. The type of waterproof floor of respondents' houses in the form of smooth/regular plaster was 22 (32.8%), tiles were 1 (1.5%) and ceramics were 31 (46.3%). Respondents who have the floor of the house is not waterproof as much as 3 (4.5%) respondents with the floor of the house in the form of land and 10 (14.9%) respondents with the floor of the house in the form of rough plaster/irregular.

A watertight house floor is a good type of house floor, while a non-watertight house floor is a bad type of house floor. A good type of home floor is a type of floor that is not wet during the rainy season and not dusty during the dry season (Saputri and Astuti, 2019) The condition of the

floor of the house is not waterproof as it is still in the form of rough plaster, soil and sand can trigger a person affected by diarrhea because the floor can be a place to live germs and dust (Samiyati et.al., 2019)

The results showed that H0 was accepted, which means there was not association between the type of house floor and the incidence of diarrhea in toddler in the working area of Ambal I Health Center, in 2022. The result of this study was in line with research conducted by Samiyati et al (2019).

The number of diarrhea toddlers in this study was common in toddlers with the type of waterproof floor than toddlers with the type of floor was not waterproof. This shows that the type of waterproof house floor can also affect toddlers affected by diarrhea because diarrhea is caused by various factors not only environmental factors but there are influences from behavioral factors, health services, nutrition, socio-economic and others (Maidartati and Angraeni, 2017). Floors of the house is a place that closely related to toddlers. Toddler activities that play on the floor of the house cause contact between the toddler's body with the house floor (Saputri and Astuti, 2019). Therefore, it is important to keep the floor of the house clean so that the risk of transmitting diarrheal diseases is reduced. The behavior of respondents to maintain the cleanliness of the floor of the house by cleaning it every day (67 or 100% of respondents clean the floor of the house every day) can prevent the transmission of diseases, such as diarrheal diseases (Taosu and Azizah, 2013).

IV. CONCLUSION

Based on the results of this study can be concluded that: the respondents had diarrhea in toddler in the last 3 months as many as 37 (55.2%) toddlers, there were no association between environmental factors and the incidence of diarrhea in toddlers in Ambal I Health Center working area in 2022.

Ambal I Health Center is expected to improve the performance of residential environmental health programs and provide motivation and education related to environmental-based diarrhea disease prevention efforts such as throwing toddler feces into the toilet and making closed SPAL. The community is expected to improve the cleanliness of the home and surrounding environmental sanitation such as in the bathroom, fecal garbage disposal, waste water disposal environment, garbage disposal sites and cleanliness of the floor of the house to prevent transmission of diarrheal diseases. Further researchers are expected to add other variables, not only clean water sources, means of disposal of feces, waste water disposal facilities, garbage disposal facilities and type of house

floor but other variables such as chemical pollution in the water or in the food that are suspected to have an influence and associated with the incidence of diarrhea.

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