



Determinants of Diarrhea Incidence in Toddlers in the Work Area Paal V Health Center 2024

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Abstract . Background: Diarrhea is a condition in which a person experiences bowel movements more than three times a day with liquid-textured feces, often accompanied by mucus or blood, and occurs more often than usual. The purpose of this study was to determine the determinants of diarrhea in toddlers in the work area of the Paal V Health Center in 2024. This study is a quantitative study using a Cross Sectional approach method. The sample in this study was 167 mothers of toddlers with a purposive sampling technique. The study was conducted from August 2024 to January 2025. The research instrument used a questionnaire and observation sheet. The variables used were CTPS habits, exclusive breastfeeding, visits to integrated health posts, maternal employment status, clean water sources, healthy toilets. Cronbach's results Validity Test Diarrhea incidence (0.404), CTPS habits (0.632), exclusive breastfeeding (0.636), visits to integrated health posts (0.690). The results of the CTPS habit analysis obtained p-value (0.034), exclusive breastfeeding (0.016), visits to integrated health posts (0.107), maternal employment status (0.042), clean water sources (0.154), healthy toilets (1.000). There is a relationship between CTPS habits, exclusive breastfeeding, maternal employment with the incidence of diarrhea in toddlers. There is no relationship between visits to integrated health posts, clean water sources, healthy toilets with the incidence of diarrhea.

Keywords : Diarrhea, Exclusive Breastfeeding, Maternal Employment Status , Toddlers, Washing Hands with Soap

1. INTRODUCTION

Diarrhea is a condition in which a person experiences bowel movements more than three times a day with liquid-textured feces, often accompanied by mucus or blood, and occurs more often than usual. This condition can last for several days and has the potential to cause loss of fluids and electrolytes that are important for body balance and survival (Penyakit Diare, 2024). Diarrhea is a digestive tract infection that is a global health problem in developing countries including Indonesia (*Pencegahan dan Pengobatan pada Penyakit Diare*, 2022). Diarrhea is one of the main factors causing death in toddlers, contributing around 9% of the total number of deaths of children under five years of age globally in 2021. This condition results in more than 1,200 child deaths per day, or around 444,000 deaths per year (Unicef, 2024)

In Indonesia, in 2021 the number of cases found was 22.18% or 818,687 of the target of 3,690,984 toddlers with diarrhea (Jenderal, Dan and Penyakit). Based on the Indonesian survey report, cases of diarrhea in toddlers in 2023 were found to be 59,253 toddlers (Indonesia, 2023). Based on the Ministry of Health of the Republic of Indonesia, the discovery of diarrhea cases reported nationally in 2021 was found to be 818,687 cases in toddlers (Kementerian Kesehatan RI, 2023).

According to data from the Jambi City Health Office, the most cases of diarrhea were found in 2023 in the last three years, cases of diarrhea in 2023 increased drastically, where the Paal V Health Center was one of the highest contributors of cases (*Profil Dinas Kesehatan Kota Jambi*, no date). Based on data from the Paal V Health Center in 2021, 29 cases of diarrhea were found (1.84%), then increased in 2022 to 88 cases (5.5%), and reached 143 cases (9.08%) in 2023 (*Profil Dinas Kesehatan Kota Jambi*, 2023).

Diarrhea can occur for some time and cause the body to lack the water and salts needed to maintain vital functions (*Penyakit Diare*, 2024). Diarrhea can occur repeatedly due to persistent infections caused by an imperfect healing process, or infections caused by other pathogens, and the body's inability to digest food is caused by an intestine that is not functioning optimally (Hutasoit, Susilowati and Hapzah, 2019). Symptoms of diarrhea can range from mild to severe, the common symptoms of diarrhea are fever, nausea, vomiting, cramps or abdominal pain, and weight loss, more serious symptoms of diarrhea can include dehydration, which is characterized by a dry mouth, the emergence of very intense thirst, and darker urine, and decreased urine production, Diarrhea is classified into three types including acute, chronic, and parsinten (*Diare Akut pada Anak*, 2022). According to the Trias epidemiological theory in the book *Theory and Application of Health Epidemiology* there are three main factors that influence the emergence of diseases and health disorders, namely *agents* (causal factors), *hosts* (hosts), and *environments* (environments) (Novi Wulan Sari, S.ST. *et al.*, 2021). The cause of diarrhea is mostly caused by infection due to the entry of toxins and microorganisms through the mouth, can also be introduced through the fingers or hands of an infected person, often contamination is found in water or food consumed, which is contaminated by feces from animals or humans (Wardani *et al.*, 2022). Transmission of diarrhea generally occurs through the mouth, microorganisms enter the digestive tract due to the impact of consuming food and drinks contaminated with feces (Martiosa, Rahardja and Paskaria). Fecal-oral, namely through contaminated food and drinks, and through direct contact with the patient's feces. The cycle of transmission of diarrhea through feces, flies, food utensils, and fingers (Kilas Info Care Of Diarrhea, 2022). The symptoms of diarrhea in toddlers are that children become whiny, their appetite decreases, their body temperature increases and then diarrhea occurs. If not treated immediately, the stool can change color to greenish and be accompanied by blood (Sari *et al.*, 2021). Symptoms of diarrhea can vary according to the characteristics of the diarrhea infection (Annisa, 2022).

A preliminary study conducted on 10 respondents domiciled in the work area of the Paal V Health Center in the past month still found toddlers with diarrhea, sources of clean water

used by residents include PDAM and wells. The availability of good clean water is very important for health and hygiene, especially in supporting a healthy lifestyle in the family, for breastfeeding there are still babies who have not received exclusive breastfeeding since birth for several reasons, There are still mothers who do not routinely take their children to the integrated health post for health checks and supervision. This can be triggered by various reasons, such as daily activities, low awareness of the importance of health services, or limited access to integrated health post facilities .

2. LITERATURE REVIEW

Diarrhea is a condition in which inflammation occurs in the mucosal layer lining the stomach and small intestine, this condition is often accompanied by symptoms of vomiting that can cause significant dehydration and electrolytes. This fluid loss if not treated immediately, can lead to dehydration, which in turn triggers electrolyte imbalance in the body. As a result, body function is disrupted, because the balance of fluids and important minerals needed for the performance of body organs is not achieved. If left untreated, ongoing diarrhea can cause serious complications, especially in children (Febriyanti and Triredjeki, 2021).

The best method to prevent health problems caused by germs and worms is to implement the habit of washing hands with soap and water. By washing hands regularly and properly, we can reduce the risk of disease transmission and maintain the health of ourselves and our families. This habit is very crucial, especially in crowded environments, where the spread of germs can occur quickly (Komunitas *et al.*, 2021). Microorganisms can enter the body, one of which is through the mouth through the hands, one way to prevent microorganisms from entering the body is by washing hands with soap (CTPS) (Irfayanti, Irmanto and Wibowo, 2024). The results of Sartika's study (2020) stated that there was a relationship between mothers' hand washing behavior and the incidence of diarrhea in toddlers in the Banjarmasin Terminal Health Center work area, washing hands with soap has been shown to reduce the incidence of diarrhea by approximately 40%, washing hands here is more emphasized before eating or after defecating (Sartika *et al.*, 2020).

Exclusive breastfeeding is the provision of breast milk (ASI) without other foods and drinks to babies, except for medicines, vitamins, and expressed breast milk, until the baby reaches the age of six months, ASI also contains protective factors such as lysozyme enzymes, immune substances, hormones and proteins that are suitable for babies (Wahyuni, 2021). ASI contains nutrients that are very much needed by babies for their growth and development (Novi, Meri and Ira, 2023). Adip's research (2023) stated that there was a relationship between

Exclusive ASI and the incidence of diarrhea in Bandung City, ASI has a very important role in children's immunity and is the first nutritional recommendation for children under six months of age.(Adib et al. (2023))

Health services available at the integrated health post are expected to function as a tool to reduce the incidence of disease, especially diarrhea, the use of integrated health posts as a simple health service facility is highly dependent on how often mothers bring their toddlers to the integrated health post, both for prevention and treatment of disease. This shows that the more often toddlers get access to the integrated health post for diarrhea prevention efforts, the lower the risk of diarrhea (Komunitas *et al.*, 2021).

The mother's employment status, whether the mother works or not, is an important factor in providing adequate focus and care for toddlers, which in turn can affect the risk of diarrhea. Working mothers may have limited time to provide direct attention to their children. (Limoy M dan Lit K, 2019). Tromol's research (2018) stated that there is a relationship between maternal occupation and the incidence of diarrhea in toddlers, with a P value of 0.016 in Kartasura Village, Sukoharjo (Yani Tromol Pos, 2018).

Unprotected water sources have a significant impact on increasing cases of diarrhea in children, these water sources are more susceptible to contamination from germs and pests due to flowing waste, and because of limited access to clean water, people are often forced to use unsafe sources, such as contaminated rivers (Paramasatya, 2023).

The ownership of healthy toilets using septic tank disposal systems is still relatively limited and can have an impact on the quality of environmental sanitation (Setiyono, 2019). Diarrhea is one of the diseases that can be transmitted through human waste, so it is very important to maintain environmental cleanliness and sanitation, an effective way to prevent triggers of diarrhea is to ensure that all family members use clean and hygienic toilets to avoid insects that cause disease transmission (Katiandagho and Darwel, 2019).

3. MET ODE

This study uses an observational analytical method with a cross-sectional approach. The population in this study were mothers who have toddlers in the working area of the Paal V Health Center, with a total of 1,526 toddlers. The sampling technique used was a purposive sampling technique, namely by selecting samples based on the inclusion and exclusion criteria that have been set by the researcher, the research sample amounted to 167 respondents. In this study, the places used were spread across 3 sub-districts of Suka Karya 25 samples, Paal V 81 samples, and Simpang 3 Sipin 62 samples, so that the total sample was 167 samples. To obtain

samples in each sub-district, the researcher used the Proportional random sampling technique which was obtained randomly. The technique in collecting data was by interviewing using a questionnaire sheet and observation sheet. The data from this study were analyzed using univariate and bivariate (chi-square) which were used to see the relationship between independent variables (CTPS habits, exclusive breastfeeding, visits to integrated health posts, maternal employment status, clean water sources and healthy latrines) with dependent variables (incidence of diarrhea).

4. RESULTS AND DISCUSSION

Results

Table 1 Frequency Distribution of Respondents by Mother's Age, Mother's Education, Mother's Occupation, Age, Toddler, Gender, Weight, Height

Characteristics Mother		Frequency (f)	Percentage (%)
Age Mother	10-20 Year	3	1.8
	21-30 Year	80	47.9
	31- 40 Year	72	43.1
	41-50 Year	11	6.6
	51-60 Year	1	0.6
Mother's Education	SD	7	4.2
	Junior High School	12	7.2
	High School	94	56.3
	Diploma/Bachelor	54	32.3
Work Mother	civil servant	16	9.6
	Employee Private	8	4.8
	Honorary	8	4.8
	Self-employed	3	1.8
	housewife	132	79.0
Characteristics Toddler		Frequency (f)	Percentage (%)
Age Toddler	0-12 Months	42	25.1
	13-24 Months	33	19.8
	25-36 Months	39	23.4
	37-48 Months	30	18.0
	49-59 Months	23	13.8
Type Sex	Man	85	50.9
	Woman	82	49.1
Heavy Body	1-10 kg	76	45.5
	11-20 kg	87	52.1
	21-30 kg	3	1.8

In table 1, it is known that respondents in the 21-30 year age group are the most respondents, namely (47.9%). The majority of respondents' last education was high school (56.3%). The majority of respondents did not work or were housewives, namely (79.0%). Characteristics of toddlers, most toddlers were 25-36 months old, namely (19.8%). Toddlers who were male were more, namely (50.9%) toddlers and females, namely (49.1%) toddlers. Most toddlers weighed 11-20 kg, namely (52.1%) toddlers. Most toddlers' heights were 71-90 cm, namely (42.5%) toddlers based on questionnaire data that had been carried out in the Paal V Health Center work area

Table 2 Frequency Distribution of Diarrhea Incidents in Toddlers

No	Diarrhea Incident	Frequency (f)	Percentage (%)
1	Diarrhea	82	49.1
2	No Diarrhea	85	50.9
Total		167	100

On table 2 known that proportion toddler Which Once experience diarrhea And no diarrhea No so different, toddler Which Once suffer diarrhea that is (49.1%) while toddlers who have never experienced diarrhea (50.9%)

Table 3 Frequency Distribution of CTPS Habits, Exclusive Breastfeeding, Visits Integrated Health Post, Mother's Work, Clean Water Source, Healthy Toilet

Variables	Frequency (f)	Percentage (%)
CTPS Habits		
No CTPS	57	34.1
CTPS	110	65.9
Exclusive Breastfeeding		
Not Exclusive Breastfeeding	65	38.9
Exclusive Breastfeeding	102	61.1
Integrated Health Post Visit		
Not Routinely Visiting Posyandu	66	38.9
Routine Posyandu Visits	101	61.1
Mother's Employment Status		
Doesn't work	119	71.3
Work	48	28.7
Clean Water Source		
Not eligible	9	5.4
Qualify	158	94.6
Healthy Toilet		
Not eligible	33	19.8
Qualify	134	80.2

Based on table 3, it can be seen that most respondents have practiced CTPS habits, namely 110 respondents (65.9%). Based on Exclusive Breastfeeding, most mothers are Exclusive Breastfeeding, namely 102 respondents (61.1%). Based on visits to the integrated health post, it can be seen that most mothers bring toddlers to visit the integrated health post, namely 101 respondents (61.1%). Based on the mother's employment status, it can be seen that the majority of mothers do not work or are housewives, namely 119 respondents (71.3%). Based on clean water sources, almost all respondents have used clean water, namely 158 respondents (94.6%). Based on healthy toilets, the majority of respondents have met the requirements for healthy toilets, namely 134 respondents (80.2%).

Table 4 Relationship between Independent Variables (CTPS habits, exclusive breastfeeding, visits to integrated health posts, mother's occupation, clean water sources, healthy toilets) with Dependent (incidence of diarrhea) in the Paal V Health Center Work Area

In the Past 7 Months, Control Work Area						
Diarrhea Incident	CTPS Habits				P OR (95% CI)	P-value
	Not enough		Good			
	n	%	n	%		
There is	35	61.4	47	42.7	2.14 (1.47 -4.09)	0.034
There isn't any	22	38.6	63	57.3		
Diarrhea Incident	Exclusive Breastfeeding				POR (95% CI)	P-value
	No breast milk		exclusive breastfeeding			
	n	%	n	%		
There is	40	61.5	42	41.2	2.29(1.21 - 4.32)	0.016
There isn't any	25	38.5	60	58.8		
Diarrhea Incident	Integrated Health Post Visit				POR (95% CI)	P-value
	Not Routine		Routine			
	n	%	n	%		
There is	38	57.6	44	43.6	1.76(0.94 - 3.29)	0.107
There isn't any	28	42.4	57	56.4		
Diarrhea Incident	Mother's Job				POR (95% CI)	P-value
	Work		Doesn't work			
	n	%	n	%		
There is	30	62.5	52	43.7	2.15(1.08 - 4.27)	0.042
There isn't any	18	37.5	67	56.3		
Diarrhea Incident	Clean Water Source				POR (95% CI)	P-value
	Does not meet the		Fulfil			
	n	%	n	%		

There is	7	77.8	75	47.5	3.87(0.78-19.23)	0.154
There isn't any	2	22.2	83	52.5		
Diarrhea Incident	Healthy Toilet				POR (95% CI)	P-value
	Does not meet the		Fulfil			
	n	%	n	%		
There is	16	48.5	66	49.3	0.97(0.45 - 2.08)	1,000
There isn't any	17	51.5	68	50.7		

Based on table 4, the proportion of poor handwashing habits with soap (CTPS) is higher in toddlers with diarrhea (61.4%) compared to toddlers without diarrhea (38.6%). The Chi-Square statistical test obtained a p value of 0.034 ($p < 0.05$), which means that there is a significant relationship between CTPS habits and the incidence of diarrhea in toddlers, and the POR (*prevalence odds ratio*) value = 2.136, meaning that mothers with poor CTPS habits have a 2.136 times greater risk for their toddlers to suffer from diarrhea.

Based on table 4, the proportion of non-exclusive breastfeeding is higher in toddlers who experience diarrhea (61.5%) compared to toddlers who do not experience diarrhea (38.5%). The Chi-Square statistical test obtained a value of $p = 0.016$ ($p < 0.05$), which means that there is a significant relationship between exclusive breastfeeding and the incidence of diarrhea in toddlers and the POR (*prevalence odds ratio*) value = 2.286 was obtained, meaning that mothers who do not exclusively breastfeed have a 2 times greater risk of their toddlers suffering from diarrhea.

Based on table 4, the proportion of non-routine visits to the integrated health post is higher in toddlers with diarrhea (57.6%) compared to toddlers without diarrhea (42.4%). The Chi-Square statistical test obtained a value of $p = 0.107$ ($p < 0.05$), which means there is no significant relationship between visits to the integrated health post and the incidence of diarrhea in toddlers.

Based on table 4, the proportion of maternal employment status, working mothers have a higher incidence of toddler diarrhea (62.5%) compared to those without diarrhea (37.5%). The results of the Chi-Square statistical test obtained a value of $p = 0.042$ ($p < 0.05$), which means that there is a significant relationship between maternal employment status and the incidence of diarrhea in toddlers and the POR (*prevalence odds ratio*) value = 2.147 was obtained, meaning that working mothers have a risk of 2.147 times their toddlers to suffer from diarrhea.

Based on table 4, the proportion of not meeting the requirements is higher in the incidence of toddler diarrhea (77.8%) compared to those without diarrhea (22.2%). The results of the Chi-Square statistical test obtained a value of $p = 0.154$ ($p < 0.05$), which means that

there is no relationship between clean water sources and the incidence of diarrhea in toddlers in the work area of the Paal V Health Center.

Based on table 4, the proportion of not meeting the requirements for healthy toilets is higher in toddlers who do not experience diarrhea (51.5%) compared to toddlers who experience diarrhea (48.5%). The results of the Chi-Square statistical test obtained a value of $p = 1,000$ ($p < 0.05$), which means there is no relationship between healthy toilets and the incidence of diarrhea in toddlers.

Discussion

The relationship between CTPS (washing hands with soap) and the incidence of diarrhea

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents occurred more in mothers with poor CTPS habits, namely 61.4%, compared to mothers with good CTPS habits as much as 42.7%. In this study, CTPS habits and diarrhea incidents had a significant relationship and had a 2.14 times risk of toddlers experiencing diarrhea compared to mothers with good CTPS habits.

The results of this study are in line with Aswanti's research (2024), stating that the habit of CTPS has a significant relationship with the incidence of diarrhea, the results of this study obtained a p value = 0.023 in Mempawah Timur District, The thing that needs attention from the findings of this study is the low number of respondents who wash their hands after changing diapers, this is very susceptible to transmitting diarrhea (Aswanti *et al.*, 2024). Awaladi's research (2023), stated that there is a relationship between the habit of washing hands with soap (CTPS) and the incidence of diarrhea, the results of this study obtained a p value = 0.024 in RW 011, Baloi Permai Village, Batam City in 2023 (Awaldi Doifi, 2024).

The results found in the field that there are still many mothers who have not fully implemented CTPS at important times such as preparing food, feeding toddlers, after cleaning toddlers, and after holding animals, washing hands with soap is very important to prevent infectious diseases such as diarrhea. Some mothers may assume that washing hands with water alone is effective enough to clean hands.

The relationship between exclusive breastfeeding and the incidence of diarrhea

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents occurred more in mothers who did not exclusively breastfeed, namely 61.5%, while in mothers who exclusively breastfed as much as 41.2%. In this study, there was a relationship between exclusive breastfeeding and the incidence of diarrhea and mothers who did not exclusively breastfeed had a 2.29 times greater risk of their toddlers experiencing diarrhea compared to mothers who exclusively breastfed. The results of this study

are in line with Elvina's 2024 study, stating that there is a relationship between exclusive breastfeeding and the incidence of diarrhea.

The results of this study are in line with Elvina's research (2024), stating that there is a relationship between Exclusive Breastfeeding and the incidence of diarrhea, The results of the chi square test using SPSS analysis obtained a p value = 0.001 meaning that there is a relationship between Exclusive Breastfeeding and the incidence of diarrhea in toddlers at BPM D Batam City, exclusive breastfeeding is recommended for a period of at least 4 months, but if possible up to 6 months, he should start to be introduced to solid foods, while breast milk can be given until the baby is 2 years old or even more than 2 years old (Elvina, 2024).

Breast milk (ASI) is the best source of intake for babies because it contains the right nutrients for their needs. ASI contains essential fatty acids, proteins, and carbohydrates in ideal proportions. One of the main advantages of ASI that is not yet present in formula milk is the content of immune substances such as immunoglobulin, lactoferrin, lysozyme, and cytokines, exclusive breastfeeding is an important factor in preventing and protecting against diarrhea in children (Elvina, 2024).

The Relationship between Posyandu Visits and Diarrhea Incidents

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents occurred more in mothers who routinely visited the integrated health post, namely 43.6%, while in mothers who did not routinely visit the integrated health post as much as 57.6%, the results of the study showed that there was no relationship between integrated health post visits and the incidence of diarrhea in toddlers in the work area of the Paal V Health Center. The results of this study are in line with the research of Rachmah Wahyu Ainsyah (2018), stating that there is no relationship between integrated health post visits and the incidence of diarrhea in toddlers.

The results of this study are in line with Ainsyah's (2018) study, stating that there is no relationship between visits to the integrated health post and the incidence of diarrhea in toddlers, obtained a POR value of 0.01, respondents who do not routinely visit the integrated health post have also suffered from diarrhea in the past month amounting to 87.50%, Regularly weighing babies at the integrated health post is one way to monitor the growth and development of babies and toddlers, however almost half of the total respondents, namely 32 people (47.80%) feel that weighing toddlers at the integrated health post is not important. Respondents who do not routinely weigh their toddlers at the integrated health post have also suffered from diarrhea in the past month amounting to 87.50% (Ainsyah and Lusno, 2018).

The results of the analysis showed that visits to the integrated health post were not the cause of diarrhea because mothers who routinely brought their toddlers to the integrated health post also suffered from diarrhea, indicating that although integrated health posts provide routine health services such as monitoring child growth, immunization, and education, these visits do not directly prevent diarrhea, although mothers receive information and education on how to prevent diarrhea at the integrated health post, their understanding and application in daily life can vary. Some mothers may not fully understand the correct way to prevent it or find it difficult to do it consistently for various reasons.

The relationship between maternal employment status and the incidence of diarrhea

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents is more common in working mothers, namely 62.5%, while in mothers who do not work or are housewives it is 43.7%. In the study, there was a relationship between the mother's employment status and the incidence of diarrhea and working mothers had a 2.147 times greater risk of their toddlers experiencing diarrhea compared to mothers who did not work or were housewives.

The results of this study are in line with Ernawati's research (2023), stating that there is a significant relationship between maternal occupation and the incidence of diarrhea, the results of statistical tests using Chi-Square obtained a p value = 0.045 at the Plaju Health Center in 2023. (Ernawati *et al.*, 2023) Tromol's research (2018), stated that there is a relationship between maternal occupation and the incidence of diarrhea in toddlers, obtained a P value = 0.016 in Kartasura Village, Sukoharjo (Yani Tromol Pos, 2018).

Based on what was found in the field, diarrhea cases are more common in toddlers whose mothers work, working mothers often have busy activities outside the home, so that the time and opportunity to care for and care for their toddlers are limited. This condition can affect various aspects of toddler health, working mothers often cannot directly monitor their toddler's eating patterns and hygiene at all times, the role of mothers is very closely related to maintaining and monitoring children's health, mothers who work outside the home have the risk of not being able to directly prepare and monitor their children's daily lives because their time is divided for work, but with good time management, mothers can still ensure that their children's needs are met (Ernawati *et al.*, 2023)

The relationship between clean water sources and diarrhea incidence

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents occurred in respondents with clean water sources that did not meet the requirements, namely 77.8%, while in respondents with clean water sources that met

the requirements, it was 47.5%. In this study, there was no relationship between clean water sources and diarrhea incidents.

The results of this study are in line with Aswanti's (2024) study which stated that the water source in this study was not related to the incidence of diarrhea, where the p-value = 0.065 in Mempawah Timur District, based on the results of interviews with the community, it was found that the water source used came from rainwater, mountain water and refilled bottled water. The results of monitoring the quality of rainwater, mountain water and refilled bottled water in Mempawah Timur District were generally of decent quality and met health requirements (Aswanti *et al.*, 2024). Nanda's (2023) study stated that there was no significant relationship between clean water sources and the incidence of diarrhea in toddlers in Tangkahan Village, a P-Value of 0.152 was obtained . In Rofiq's (2023) study, there was no relationship between the availability of clean water and the incidence of diarrhea in toddlers in the Ampana Barat Health Center work area, (Nanda Meutia, 2023)a p-value of 1.00 (Aynur Rofiq, 2023)was obtained .

Based on the results of the analysis that there is no relationship between clean water sources and diarrhea incidents because the results of observations show that most respondents have used water from PDAM which has met the quality of clean water because it follows the standards set by the government and related health agencies, such as the Ministry of Health, the physical quality of water used by respondents on average also shows characteristics that are in accordance with clean water standards, such as colorless, odorless, and clear, water is also distributed using a closed piping system so that the potential for contamination is smaller, thus indicating that the water used by most respondents has met the criteria for water that is safe to use for daily activities, including cooking, bathing, and drinking (Aynur Rofiq, 2023).

The relationship between healthy toilets and diarrhea incidence

Based on the results of the research that has been conducted, it was obtained that the proportion of diarrhea incidents occurred in respondents with healthy latrines that did not meet the requirements, namely 48.5% , while in respondents with healthy latrines that met the requirements, it was 49.1%. In this study, there was no relationship between healthy latrines and diarrhea incidents.

This study is in line with Rofiq's study, stating that latrines have no relationship with the incidence of diarrhea with the results obtained $p = 1.00$ in toddlers in the Ampana Barat Health Center Work Area (Aynur Rofiq, 2023). Halimah Hasibuan's study (2022) stated that there was no relationship between latrine ownership and the incidence of diarrhea in toddlers, obtained a p value = 0.18 in Losung Batu Village, Padang Sidempuan Utara District in 2022.

(Hasibuan Halimah, 2023) In Yantu's study (2021), it was stated that healthy latrines had no relationship with the incidence of diarrhea in toddlers and obtained a P value = 0.606 in Waleure Village. Factors causing diarrhea in toddlers apart from latrine sanitation can be seen from the nutritional status of toddlers, parental education factors, occupation factors, age of toddlers, socio-economic factors, food and drink factors and factors against lactose or cow's milk (Yantu, Warouw and Umboh, 2021).

5. CONCLUSION

Frequency distribution of dependent variables (diarrhea) diarrhea incidence in toddlers almost all toddlers have experienced diarrhea (49.1%). Frequency distribution of Independent variables (CTPS habits, exclusive breastfeeding, visits to integrated health posts, mother's occupation, clean water sources, and healthy toilets), most mothers have implemented CTPS well (65.9%). Most mothers exclusively breastfeed (61.1%). Most mothers routinely bring their toddlers to attend integrated health posts (61.1%). Most mothers do not work (71.3%). Almost all respondents have met the requirements for clean water (94.6%). Most respondents have used healthy toilets (80.2%) in the work area of the Paal V Health Center. There is a relationship between CTPS habits, exclusive breastfeeding, mother's occupation with the incidence of diarrhea in toddlers. There is no relationship between visits to integrated health posts, clean water sources, healthy toilets with the incidence of diarrhea in toddlers in the work area of the Paal V Health Center.

6. LIMITATIONS

In this study, there were several limitations faced by the researcher that affected the course of the study. The researcher had difficulty in finding houses inhabited by mothers with toddlers, because even though they had address data, there were often discrepancies or errors in matching the respondent's house. In addition, some respondents did not open the door, possibly because they felt uncomfortable or did not trust people they did not know. Some mothers also refused to be respondents for various reasons, such as being cooking or indeed unwilling to participate in the study. In addition, another limitation found was in the questionnaire, where there was no time span for diarrhea in toddlers, which could affect the accuracy of the data obtained.

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