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Risk Factors Affecting The Case Of Diarrhea In Toddlers At UPTD Puskesmas Aek Kota Batu, In Na Ix-X Sub- District, North Labuhanbatu Regency In 2022

Tivany Ovilla Muliadi

Program Studi Magister Ilmu Kesehatan Masyarakat,Universitas Sari Mutiara Indonesia

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ABSTRACT

The condition when toddlers lose fluids and become dehydrated happens when they experience diarrhea. It is one of the leading causes of morbidity and mortality in toddlers, globally Poor hygiene makes diarrheal illnesses spread from person to person or through contaminated food or water. Diarrhea is responsible for 9% of toddler morbidity worldwide, and its prevalence is still high. This study is aiming to identify the risk factors that affect the case of diarrhea in toddlers. In the Na IX X subdistrict of the Labuhan Batu Utara regency. This analytical cross-sectional study employs 517 mothers with toddlers in NA IX- X, North Labuhan Batu Regency, who serves the study's population. In the end, 59 participants make up the sample of the study determined by using simple random sampling. Questionnaires are given to mothers of toddlers to gather the data. Univariate analysis, bivariate analysis with the Chi-Square test, and multivariate analysis with the logistic regression test are carried out to analyze the data. The findings indicate the correlation between diarrhea cases in children, knowledge, attitude, food hygiene, and accessibility to waste disposal facilities. It is discovered that knowledge (p=0.001; PR= 6.4; 95% CI 2.859- 82.466) is the dominant variable. This indicates that the case of diarrhea in toddlers is significantly influenced by the variable of knowledge. Additionally, it is found that toddlers of mothers with inadequate information are 6.4 times more likely to experience diarrhea, compared to mothers with better knowledge about this issue. It is advised that all parties, notably the community health center

Email :
tivanyovilla24@gmail.com

1. Introduction

Diarrhea in children under the age of five is one of the main causes of child morbidity and mortality worldwide which causes the body to lose fluids and become dehydrated (Purba, M, et al, 2022; Salam, TA, & Majeed, BN, 2021) . Diarrheal infections are transmitted through contaminated food or drinking water or from person to person as a result of poor hygiene. Globally, 9% of under-five deaths are caused by diarrhea and the burden of diarrheal disease remains high (Carvajal-Vélez L, et al, 2016). It is therefore important to identify the factors associated with diarrhea in order to develop appropriate preventive and therapeutic approaches. To reduce the risk of diarrhea, it can be done by consuming safe drinking water, using good sanitation and washing hands with soap (Gebru T, et al, 2014).

According to the World Health Organization (WHO), approximately 1.7 billion cases of diarrhea in children are reported annually, resulting in 525,000 child deaths per year. Worldwide, 780 million people live without clean water, about 2.5 million people live in environments with poor sanitation, and come from developing countries such as South Asia and sub-Saharan Africa where the majority of

children experience at least 3 episodes of diarrhea. every year (Aziz FAA, 2018). In Indonesia, in 2018 the number of under-five diarrhea sufferers served in health facilities reached 1,637,708 or 40.90% of the estimated diarrhea in health facilities. Extraordinary events (KLB) of diarrhea in 2018 were recorded as 756 cases with a death rate of 36 and the CFR when the outbreak increased compared to 2017 which was 4.76%.

Recently, a lot of literature has developed around the theme of risk factors for diarrhea in children under five. Previous studies have stated that dehydration can be a very dangerous symptom in cases of diarrhea, because it is one of the main causes of death, especially in infants (Hartati & Nurazila, 2018). In addition, behavioral factors play a role in the occurrence of diarrhea, such as washing hands with soap before eating, washing hands with soap after defecating, covering food, and washing dishes and cooking utensils (Sumolang, Nurjana, & Widjaja, 2019). The basic sanitation of the house, including the type of floor of the house, the availability of latrines, and the sanitation of waste management are important factors that influence diarrheal disease. The prevalence of diarrhea is directly related to the physical condition of the house and environmental sanitation (Darnas Y, Yolanda R, 2019).

Personal hygiene, especially hand hygiene, is often underestimated. Dirty or contaminated hands can transfer pathogenic bacteria and viruses from the body, feces or other sources to food. The habit of not washing hands with soap after defecating is a habit that can be dangerous, especially when mothers cook food or feed toddlers to eat. Hand washing with soap as a cleanser, scrubbing, and rinsing with running water will wash away dirt particles that contain lots of microorganisms. The habit of washing hands with soap can reduce the incidence of diarrhea by 50% or the same as saving about 1 million children in the world from the disease every year (Fatonah S, 2005). Food sanitation is closely related to hygiene and cannot be separated. Hygiene itself is a health effort in implementing the subject's hygiene behavior such as food hygiene, eating utensils and protecting food safety. The principle of hygiene is to focus on efforts in the health of human life. The principles of sanitation and hygiene need to be applied to maintain food safety (Atmoko, 2017).

Furthermore, the behavior of the food vendor can be influenced by the knowledge and attitude of the food vendor (Sari, 2017). Hygiene practices of food handlers are related to the microbiological quality of food (Yuniatun, 2017). Food is a major cause of diarrhea when processed or stored under unhygienic conditions and water can contaminate food during processing. Food and drink can be contaminated by microorganisms carried by insects or by dirty hands (Sugiarto et al, 2019). The results of the study (Iryanto, AA, et al, 2021) showed that under-five diarrhea was related to the type of clean water, Clean water quality (E. Coli) (p = 0.000), final household waste treatment (p = 0.000), condition of sewerage (p = 0.000), trash can quality (p = 0.001), sewer quality (p = 0.000), density of flies in the trash (p = 0.017), and density of flies in the sewer (p = 0.089). Research (Heryanto, E, et.al, 2021) shows that there is a significant relationship between knowledge (p = <0.001), the habit of maintaining the cleanliness of eating utensils (p = <0.001), hand washing habits (p = <0.001) and serving formula milk (p = <0.001) with the incidence of diarrhea in children under five. Research (Ilmaskal, R & Wati, L, 2022) shows that the mother's level of knowledge, the habit of washing hands with soap, the availability of healthy latrines and nutritional status are risk factors for diarrhea in toddlers. The dominant variables influencing the incidence of diarrhea in children under five are the mother's level of knowledge OR 2.82; (95% CI 1.72-4.63); p = 0.000 and nutritional status OR 1.85; (95% CI 1.015-3.370); p = 0.045. and density of flies in the sewer (p = 0.089). Research (Heryanto, E, et.al, 2021) shows that there is a significant relationship between knowledge (p = <0.001), the habit of maintaining the cleanliness of eating utensils (p = <0.001), hand washing habits (p = <0.001) and serving formula milk (p = <0.001) with the incidence of diarrhea in children under five. Research (Ilmaskal, R & Wati, L, 2022) shows that the mother's level of knowledge, the habit of washing hands with soap, the availability of healthy latrines and nutritional status are risk factors for diarrhea in toddlers. The dominant variables influencing the incidence of diarrhea in children under five are the mother's level of knowledge OR 2.82; (95% CI 1.72-4.63); p = 0.000 and nutritional status OR 1.85; (95% CI 1.015-3.370); p = 0.045. and density of flies in the sewer (p = 0.089). Research (Heryanto, E, et.al, 2021) shows that there is a significant relationship between knowledge (p = <0.001), the habit of maintaining the cleanliness of eating utensils

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Based on the results of an initial survey at the UPTD Puskesmas Aek Batu City, there were 175 children under five who suffered from diarrhea in 2019, 120 people in 2020 and as many as 189 people who suffered from diarrhea in 2021. Furthermore, from the results of interviews conducted by the author on 7 mothers of children under five , 5 people stated that their understanding of the causes and effects of diarrhea in toddlers is still lacking, this happens because they rarely access information about the impact of diarrhea on toddlers and even rarely visit the puskesmas because they are busy at work to meet family needs. In addition, 2 other people stated that they already understood the causes and effects of diarrhea in toddlers but did not understand how to prevent diarrhea in toddlers. Then the results of field observations also show that environmental factors and family sanitation are also still classified as poor. From this phenomenon, the authors are interested in conducting research on risk factors that influence the incidence of diarrhea in toddlers at the UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, in 2022.

2. Method

This research is an analytical study with a cross-sectional study design that aims to determine the risk factors that influence the incidence of diarrhea in children under five at the UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

Sample

The sampling technique was carried out by simple random sampling, namely simple random sampling by conducting a lottery and giving a serial number according to the number of respondents and providing opportunities for respondents to choose the lottery number, and each lottery number chosen by the

respondent.

Data collection

Primary data is data obtained directly from mothers who have toddlers who are obtained by distributing questionnaires to respondents. In this case, the researcher directly gave a questionnaire by making a visit to the house of the mother of the toddler who had been determined by the researcher. Secondary data in this study were obtained through reports and documents from the Puskesmas Working Area.

Data processing

A few steps to take with the data:

1. Data check (Editing)
   This editing process is a process by examining data that has been obtained from the field after conducting research. Checking the data in the form of a register book from the puskesmas, a list of questions or answers from respondents, namely questionnaires that have been answered by respondents during the research.
2. Giving Code (Coding)
   The coding process is the stage of giving the answer code to the questionnaire that has been answered by the respondent during the research. Giving this code in the form of numbers so that it is easier and simpler.
3. Data entry (Entry)
   The data entry process is a process by entering or transferring respondents' answers or answer codes for each variable into the master data media (master table). The data entry process is carried out with the Microsoft Office Excel program, then transfer the data to a computer program package using SPSS software
4. Data Cleaning (Cleaning Data)
   The data cleaning process is the process of re-checking the data that has been entered in the form of master data or SPSS statistical software. This data cleaning process aims to find out whether the data that has been entered has errors or not.
5. Data Compilation (Tabulating Data)
   The process of compiling this data is the process of compiling data in such a way that it is easy to add up, organize to be presented and analyzed. Data compilation can be done by compiling data in the form of frequency distribution tables, and cross tables

Data analysis

Data analysis includes (Hulu and Sinaga, 2019):

Univariate analysis, univariate analysis is to analyze each research variable with the aim of knowing the distribution of each research variable and Bivariate analysis is carried out to see the relationship between the independent variable and the dependent variable using the chi-square test at a 95% confidence level. The results of statistical calculations can show that there is a relationship or no significant relationship between the variables studied by looking at the p value, if the results of the statistical calculation of the p value < 0.05, then the statistical calculation is significant which means that there is a significant relationship between one variable and another variable as well as Multivariate Analysis To see which independent variables most dominantly affect the dependent variable using the Multiple Logistics Regression test at the 95% confidence level (CI).

3. Results and Discussion

Univariate Analysis

Table 1. Frequency distribution of the age of mothers under five in UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

No	Age	Frequency	%
1	<20 years	9	15.3
2	20-35 years old	36	61.0

3	>35 years old	14	23.7
	Education		
1	SD	5	8.5
2	JUNIOR HIGH SCHOOL	38	64.4
3	SENIOR HIGH SCHOOL	14	23.7
4	D-3/S-1	2	3.4
	Work		
1	IRT	19	32.2
2	Farmer	24	40.7
3	Self-employed	14	23.7
4	civil servant	2	3.4
	Total	59	100

Table 4.1 shows that the majority of mothers aged 20-35 years are 36 people (61%). The mother's education is the majority of junior high school as many as 38 people (64.4%) the majority work is farmers as many as 24 people (40.7%).

Knowledge

Table 2. Frequency of Mother Toddler Knowledge in UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

	Knowledge	Frequency	%
1	Not good	34	57.6
2	Well	25	42.4
	Total	59	100.0

Table. 2 shows that the knowledge of the majority of mothers under five is not good as many as 34 people (57.6%).

Attitude

Table 3. Frequency Distribution of Respondents' Attitudes in UPTD Puskesmas Kota Batu NA District IX-X North Labuhanbatu Regency, 2022.

	Attitude	Frequency	%
1	Negative	38	64.4
2	Positive	21	35.6
	Total	59	100.0

Table. 3. shows that the majority of mothers' attitudes are negative as many as 38 people (64.4%).

Food Handler Hygiene

Table 4. Frequency Distribution of Food Handlers Hygiene in UPTD Puskesmas Aek Batu City, NA IX-X District, North Labuhanbatu Regency, 2022.

	Food Handler Hygiene	Frequency	%
1	Not eligible	40	67.8

2	Qualify	19	32.2
	Total	59	100.0

Table. 4 shows that the majority of food handlers' hygiene did not meet the requirements as many as 40 people (67.8%).

Food Serving

Table 5. Distribution of Food Serving Frequency in UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

	Food Serving	Frequency	%
1	Not eligible	32	54.2
2	Qualify	27	45.8
	Total	59	100.0

Table. 5 shows that the majority of food serving is notmet the requirements as many as 32 people (54.2%).

Availability of Sewerage

Table 6. Frequency Distribution of Availability of Sewerage Channels in UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

	Sewer Availability Waste	Frequency	%
1	Not eligible	29	49.2
2	Qualify	30	50.8
	Total	59	100.0

Table. 6. indicates that the availability of the sewerage canal meets the requirements of the majority of 30 people (50.8%).

The Incidence of Diarrhea in Toddlers

Table 7. Distribution of the Frequency of Diarrhea in Toddlers at the UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022.

	The Incidence of Diarrhea in Toddlers	Frequency	%
1	Diarrhea	37	62.7
2	No diarrhea	22	37.3
	Total	59	100.0

Table. 7. shows thatthe majority of toddlers experience diarrhea as many as 37 people (62.7).

Multivariate Analysis

Variable Selection in Logistics Regression Analysis

VariableIncluded in the logistic regression test are variables that have a p value of <0.25 where the results of the selection of these variables can be seen in Table 4.14 below.

Table 8. Selection Results of Variables That Can Be Included in the Logistics Regression Model

No.	**Variable**	**p value**	**Score stipulation**	**Modeling**

1. Knowledge	<0.001	p < 0.25	Enter modeling
2. Attitude	0.001	p < 0.25	Enter modeling
3. Hygiene of handlers food	0.001	p < 0.25	Enter modeling
4. Food serving	0.001	p < 0.25	Enter modeling
5. Channel availability waste disposal	0.001	p < 0.25	Enter modeling

Table 8. shows that the variables including knowledge, attitudes, hygiene of food handlers, food presentation, availability of sewerage have a p value <0.25 so that these variables are continued to the multivariate analysis stage.

Table 9. Logistics Regression Model for Diarrhea in Toddlers

Variable	Model 1 p value;PR(95%CI)	Model 2 p value;PR(95%CI)	Model 3 p value;PR(95%CI)
Knowledge	0.003; 5.7 (2,512-86,654)	0.003; 5.2 (2,509-84,109)	0.001; 6.4 (2.859-82.466)
Attitude	0.020; 2.8 (1,484-94,077)	0.018; 2.9 (1,509-79,877)	0.005; 3.9 (2.212-75.705)
Hygiene handlerfood	0.010; 3.8 (1,859-88,208)	0.009; 3.1 (1,883-78,317)	0.005; 4.2 (2.163-81.516)
Presentation food	0.691; 1.5 (0.222-9.699)	0.738; 1.3 (0.228-8.045)	-
Availabilitysewer waste	0.816; 0.8 (0.116-5.465)	-	-

Table 9. shows that the dominant variable related to the incidence of diarrhea in children under five based on logistic regression analysis is the knowledge variable (p = 0.001; PR = 6.4; 95% CI 2.859-82.466) meaning that the knowledge variable is significant to the incidence of diarrhea in infants. Mothers of toddlers who have poor knowledge have 4.2 times the tendency of toddlers to suffer from diarrhea compared to mothers who have good knowledge.

discussion

The Effect of Knowledge on the Incidence of Diarrhea in Toddlers

According to the WHO (World Health Organization) diarrhea comes from the Greek language, namely readypoia and consists of two words sia (through) and ppoia (flow). It was concluded that diarrhea is a condition where a person experiences defecation many times a day, it can be said to be 3 or more times with the consistency of feces in liquid form and can cause fluid loss in the body (Sumampouw et al., 2017).

The results showed the value (p = <0.001; PR=2.7; 95%CI 1.480-4.800) meaning that there was an influence of mother's knowledge on the incidence of diarrhea in toddlers. Mothers of toddlers who have poor knowledge have 2.7 times the tendency of toddlers to suffer from diarrhea compared to mothers who have good knowledge. This is in line with research (Heryanto, E, et.al, 2021) which shows that there is a significant relationship between knowledge (p = <0.001) and the incidence of diarrhea in toddlers. Research (Ilmaskal, R & Wati, L, 2022) also shows that the mother's level of knowledge is one

of the risk factors for diarrhea in toddlers. The dominant variable influencing the incidence of diarrhea in children under five was the mother's level of knowledge (p = 0.000; OR 2.82; (95% CI 1.72-4.63).

The causes of diarrhea that are often encountered in the community are clinical diarrhea that can be grouped into 6 groups, namely infection (caused by bacteria, viruses, or parasitic infestations), malabsorption, allergies, poisoning, immunodeficiency, and others (Sumampouw et al., 2017).

Knowledge isThe result of knowing from someone on the merger or collaboration between all subjects and objects is known through the senses they have or it can be said that knowledge is obtained from the five human senses (Suriamsumantri, 2017). The ability of one's knowledge to recall what information has been received, thus the cognitive domain is a very important domain in shaping one's actions (Nurmala et al., 2018). From the results of the study, it can be seen that the majority of mothers' knowledge of toddlers is not good, so many mothers do not know about efforts to prevent diarrhea in toddlers.

The results showed that from 34 mothers of children under five with poor knowledge, there were 29 (85.3%) children under five who suffered from diarrhea and 5 (14.7%) children under five who did not suffer from diarrhea. Of the 25 mothers of children under five who had good knowledge, there were 8 (32%) children under five who suffered from diarrhea and 17 people (68%) under five who did not suffer from diarrhea. From the results of this study, it can be seen that from 34 mothers of children under five who had poor knowledge there were 29 (85.3%) children under five who suffered from diarrhea, this happened because many mothers of children under five did not know about the causes and effects of diarrhea, signs and symptoms of diarrhea, so that many toddlers suffer from diarrhea due to lack of supervision for children under five regarding the food consumed every day.

The Effect of Attitude on the Incidence of Diarrhea in Toddlers

The application of clean and healthy living behavior is one way to avoid infectious diseases such as diarrhea, because diarrhea can spread from food, dirt, insects, and also one's own hands (Ministry of Health, 2011; Hany, Fida and Maya, 2012). Breaking the chain of transmission of infectious diarrheal diseases is the most practical way to prevent it from spreading to other people. Therefore, the attitude of mothers of toddlers in preventing diarrheal diseases in toddlers is very important. Attitude is a reaction or response that is still closed from someone to a stimulus or object. It can be concluded that the attitude cannot be directly seen, but can only be interpreted beforehand from closed behavior. Attitudes clearly show the connotation of appropriate reactions to certain stimuli which in everyday life are emotional reactions to social stimuli. Attitude is not yet an action or activity, but is a predisposition to the action of a behavior (Suryani et al., 2020).

The results showed that the value (p = 0.001; PR = 2.3; 95% CI 1.266-4.433) means that there is an influence of the attitude of mothers of children under five on the incidence of diarrhea in children under five. Mothers of toddlers who have a negative attitude have 2.3 times the tendency of toddlers to suffer from diarrhea compared to mothers who have a positive attitude. This research is supported by research (Syahrizal, 2018) which shows that toddlers who have mothers with negative attitudes towards clean and healthy living behavior play an important role in the incidence of diarrhea where (p-value = 0.047 <0.05; OR = 3.1; 95%; Cl = 1.13-8.60) which means that toddlers are at risk of having diarrhea 3.1 times because of the mother's negative attitude towards clean living behavior. Negative attitudes can be changed by increasing the mother's knowledge about diarrhea where (p-value = 0.000<0.

The results of the study also show thatFrom 38 mothers of children under five who had negative attitudes, there were 30 (78.9%) children under five who suffered from diarrhea and 8 (21.1%) children under five who did not suffer from diarrhea. Of the 21 mothers of children under five who had a positive attitude, there were 7 (33.3%) children under five who suffered from diarrhea and 14 (66.7%) children under five who did not suffer from diarrhea. This means that from 38 mothers of children under five who have a negative attitude, there are as many as 30 (78.9%) toddlers who suffer from diarrhea because many mothers of children under five have a response or reaction that does not agree as in the statement in the questionnaire, namely disagreeing if the baby is breastfed. To prevent diarrhea, they disagree that not having a sewerage system will cause diarrhea in toddlers, and they don't agree that drinking uncooked water can cause diarrhea.

The Effect of Food Handler Hygiene on the Incidence of Diarrhea in Toddlers

Food handlers in carrying out food handling service activities must meet the following requirements (Kepmenkes No. 942/Menkes/SK/VII/2003): do not suffer from easily communicable diseases such as coughs, colds, influenza, diarrhea, similar stomach ailments, cover wounds open wounds/ boils or other wounds), keep hands, hair, nails, and clothes clean, wear an apron, and headgear, wash hands every time you want to handle food, touch food must use tools/equipment or with hand pads, not while smoking , scratching the limbs (ears, nose, mouth or other parts), not coughing or sneezing in front of the snacks served and or without covering the mouth or nose.

The results showed that the value (p = 0.002; PR = 2.4; 95% CI 1.240-4.857) means that there is an influence of food handler hygiene on the incidence of diarrhea in toddlers. Mothers under five with hygiene touching food that does not meet the requirements, 2.4 times the tendency of toddlers to suffer from diarrhea compared to mothers with hygiene touching food that meets the requirements. This is in line with research (Hamzah, B, 2022) which showed that there was a significant relationship between the cleanliness of food handlers such as hand washing habits (p = 0.022) and nail hygiene (p = 0.010) on the incidence of diarrhea in toddlers.

Food sanitation is closely related to hygiene and cannot be separated. Hygiene itself is a health effort in implementing the subject's hygiene behavior such as food hygiene, eating utensils and protecting food safety. The principle of hygiene is to focus on efforts in the health of human life. The principles of sanitation and hygiene need to be applied to maintain food safety (Atmoko, 2017). The results of the study show that from 40 mothers of toddlers with hygiene touching food that does not meet the requirements there are 31 people (77.5%) toddlers who suffer from diarrhea and 9 people (22.5%) under five who do not suffer from diarrhea. Of the 19 mothers of children under five with hygiene touching food that met the requirements, there were 6 people (31.6%) who suffered from diarrhea and 13 people (68, 4%) toddlers who do not suffer from diarrhea. From 40 mothers of toddlers with hygiene touching food that did not meet the requirements, there were 31 people (77.5%) who suffered from diarrhea because the food handlers of toddlers did not pay attention to personal hygiene.

From the results of the study, it can be seen that food handlers for toddlers do not wear aprons or headgear, do not wash their hands every time they handle food for toddlers, do not keep nails and hands clean. Meanwhile, from 19 mothers of toddlers with hygiene touching food that meet the requirements, there are 6 (31.6%) toddlers who suffer from diarrhea, because a small proportion of toddlers consume food from outside such as eating snacks, fast food so that toddlers suffer from diarrhea. even though food handlers have good personal hygiene, food handler hygiene practices are related to the microbiological quality of food (Yuniatun, 2017). Food is a major cause of diarrhea when processed or stored under unhygienic conditions and water can contaminate food during processing.

The Effect of Food Presentation on the Incidence of Diarrhea in Toddlers

Food serving is the final part of the food journey. The food served is ready-to-eat food. Ready-to-eat food must be fit to eat (Depkes RI, 2001). An attractive presentation of food will provide added value in attracting customers. There are various ways to serve food to consumers, one of which is to use plastic box containers that are used only once, and equipped with spoons, forks and tissue wrapped in clean plastic and tightly closed. The serving of food must meet requirements such as: in a closed state when transported, not tasted directly from the original container, because it will facilitate contamination through splashing of saliva and dust, serving time that is more than 6 hours after the food is finished cooking,

The results showed that the value (p = 0.003; PR = 1.9; 95%CI 1.229-3.237) means that there is an effect of food presentation on the incidence of diarrhea in children under five. Mothers of toddlers with serving food that do not meet the requirements have 1.9 times the tendency of toddlers to suffer from diarrhea compared to mothers with hygiene touching food that meets the requirements. This is in line with Rahmadiani's research (2016) on the factors that influence the number of germs on cutlery which states that the storage area for cutlery has a relationship with the number of germs on cutlery (p value = 0,000) where eating utensils with poor storage have the risk is 143,500 times greater for the number of germs than eating utensils with good storage.

Research results (Arifin, MH, and Wijayanti, 2019) Based on observations, as many as 14 canteens (77.8%) did not meet the requirements to store clean equipment in a pollution-free place. Respondents used to put clean cutlery and cooking utensils in an open area that was not clean and seemed untidy. This is also supported by the unavailability of facilities to store the utensils used when serving food.

From the results of the study also showed that from 32 mothers of children under five with food serving that did not meet the requirements, there were 26 people (81.3%) who suffered from diarrhea and 6 people (18.8%) who did not suffer from diarrhea. Of the 27 mothers of children under five who served food that met the requirements, there were 11 (40.7%) children under five who suffered from diarrhea and 16 people (59.3%) who did not suffer from diarrhea. This means that the presentation of food for toddlers still does not meet the requirements such as not avoiding contamination, most of the equipment for serving is not kept clean and not accommodated and touched with clean equipment.

The Effect of Availability of Sewerage on the Incidence of Diarrhea in Toddlers

According to Permenkes No. 3 of 2014 concerning STBM, the principle of securing household liquid waste is that bathroom and kitchen waste water must not be mixed with water from latrines, must not be a breeding ground for vectors, must not cause odors, must not have puddles that cause slippery floors and prone to accidents. , connected to public sewers/sewers or infiltration wells.

The results showed that the value (p = 0.004; PR = 1.9; 95%CI 1.228-2.970) means that there is an effect of the availability of sewerage on the incidence of diarrhea in children under five. The availability of sewers that do not meet the requirements is 1.9 times the tendency for toddlers to suffer from diarrhea compared to the availability of sewers that meet the requirements. The results of the study are supported by research results (Iryanto, AA, et al, 2021) which show that toddler diarrhea is related to the type of clean water, clean water quality (E. Coli) (p = 0.000), final household waste treatment (p = 0.000), condition of sewerage (p = 0.000), quality of trash cans (p = 0.001), quality of sewers (p = 0.000), density of flies in trash cans (p = 0.017), and density of flies in sewers (p = 0.089)

The results also showed that from 29 mothers of children under five with the availability of sewerage that did not meet the requirements, there were 24 (82.8%) under-fives who suffered from diarrhea and 5 (17.2%) under-fives who did not suffer from diarrhea. From 30 mothers of children under five with the availability of sewerage that meets the requirements, there are 13 people (43.3%) who suffer from diarrhea and 17 people (56.8%) who do not suffer from diarrhea. This means that the sewer that does not meet the requirements can be one of the risk factors for diarrhea. Because the sewerage is a breeding ground for vectors, it creates odors, so that it can affect the incidence of diarrhea in toddlers.

4. Conclusion

Based on research on risk factors that affect the incidence of diarrhea in children under five at the UPTD Puskesmas Kota Batu, District NA IX-X, North Labuhanbatu Regency, 2022., it can be concluded as follows. ;PR=2.7; 95%CI 1.480-4.800). Mothers of toddlers who have poor knowledge have 2.7 times the tendency of toddlers to suffer from diarrhea compared to mothers who have good knowledge. There was an influence of the attitude of the mother of children under five on the incidence of diarrhea in children under five (p = 0.001; PR = 2.3; 95% CI 1.266-4.433). Mothers of toddlers who have a negative attitude have 2.3 times the tendency of toddlers to suffer from diarrhea compared to mothers who have a positive attitude. There is an influence of food handler hygiene on the incidence of diarrhea in children under five (p = 0.002; PR = 2.4; 95% CI 1.240-4.857). Mothers with hygiene touching food that do not meet the requirements, 2.4 times the tendency of toddlers to suffer from diarrhea compared to mothers with hygiene touching food that meet the requirements There is an effect of serving food on the incidence of diarrhea in toddlers (p = 0.003; PR = 1.9; 95% CI 1.229-3.237). Mothers of toddlers with serving food that do not meet the requirements have 1.9 times the tendency of toddlers to suffer from diarrhea compared to mothers with hygiene touching food that meets the requirements. There is an effect of the availability of sewerage on the incidence of diarrhea in children under five (p = 0.004; PR = 1.9; 95% CI 1.228-2.970). The availability of sewers that do not meet the requirements is 1.9 times the tendency for toddlers to suffer from diarrhea compared to the availability

of sewers that meet the requirements. The dominant variable related to the incidence of diarrhea in infants based on logistic regression analysis was the knowledge variable (p = 0.001; PR = 6.4; 95% CI 2.859-82.466), meaning that the knowledge variable was significant to the incidence of diarrhea in infants. Mothers of toddlers who have poor knowledge have 4.2 times the tendency of toddlers to suffer from diarrhea compared to mothers who have good knowledge.

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