



Risk Factors Affecting the Incidence of Diarrhea in Children Under Five Years Old in the Working Area of Tarus Public Health Center, Kupang District, in 2022

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ABSTRACT

Diarrhea is a disorder of defecation characterized by defecation more than 3 times a day with the consistency of liquid stool, may be accompanied by blood. Until September 2022 Puskesmas Tarus had the highest incidence of diarrhea compared to other health centers with 126 cases of diarrhea in toddlers. The purpose of this study was to determine the risk factors associated with the incidence of diarrheal disease in children under five years of age in the working area of Puskesmas Tarus, Kupang Regency. This study was an analytic observational study using a case control study research design. This study was conducted in the working area of Puskesmas Tarus Kupang Regency in February-March 2023. The results showed a significant relationship between maternal knowledge ($p=0.000$; $OR=3,974$), maternal attitude ($p=0.000$; $OR=4,594$), hand washing behavior ($p=0.000$; $OR=4,421$), exclusive breastfeeding history ($p=0.001$; $OR=3,632$) and maternal education ($p=0.023$; $OR=2,400$) with the incidence of diarrhea in toddlers. There is no significant relationship between maternal employment status and the incidence of diarrhea in toddlers ($p=0,114$; $OR=0,489$). Conclusion, that the variables of maternal knowledge, maternal attitude, hand washing behavior, exclusive breastfeeding history and maternal education have a significant relationship with the incidence of diarrhea in toddlers, and the variable maternal employment status has no significant relationship with the incidence of diarrhea in toddlers in the working area of Puskesmas Tarus, Kupang Regency.

INTRODUCTION

Diarrhea means an increase in the frequency of bowel movements or a decrease in density in the form of stools (Suryaningsih, 2020). Children under five are prone to diarrhea or what is also called vomiting, vomiting or vomiting leakage. A child/toddler is said to have diarrhea when he/she defecates more than usual every day, has loose stools, soft to liquid stools, and is sometimes accompanied by vomiting. The vomiting may be short-lived, but diarrhea may continue for up to ten days (Wina Lestari *et al.*, 2021). In Indonesia, diarrhea is an endemic disease and a potential extraordinary event that is often associated with death.

Tarus health centers is one of the health centers in Kupang Regency with a working area covering 8 villages. Based on data from the Kupang Regency Health Office in 2019 Tarus health centers was recorded as having the highest number of diarrhea cases with 239 cases of diarrhea in children under five, then in 2020 it decreased to 188 cases of diarrhea in children under five and in 2021 it continued to decrease to 132 cases. Until September 2022, Tarus health centers had the highest incidence of diarrhea compared to other health centers with 126 cases of diarrhea in children under five (Kupang District Health Office, 2022). The incidence of diarrhea can be caused by direct factors and indirect factors.

Maternal factors also play a role in the incidence of diarrhea in children under five. The mother is the closest person to the toddler. Direct factors that can cause diarrhea are maternal knowledge, maternal attitudes, exclusive breastfeeding history, hand washing behavior, and hygiene sanitation (Hatta, 2020). Based on the problems listed in the background above, the researcher is interested in examining the Risk Factors Affecting the Incidence of Diarrheal Disease in Toddlers in the Tarus health centers Kupang Regency. It is hoped that this research will be used as information and insight about diarrhea in toddlers, so that mothers can prevent the incidence of diarrhea in their children and as input for the health center to make health programs and policies, especially in efforts to overcome diarrheal disease.

METHOD

This study was an analytical observational study using a case control research design. This study was conducted in the Tarus health centers working area of Kupang Regency in 2023. The research time was conducted in February-March 2023. This population is divided into a case population and a control population, where based on data at the Tarus Health Center, there are 126 toddlers who experience diarrhea. The sample in this study was divided into two groups of cases and control with a ratio of 1:1. Based on the calculation of the sample size using the Lemeshow formula, 65 case samples and 65 control samples were obtained, so the number of samples needed was 130 samples. Data collection techniques were carried out by analyzing descriptively and analytically. Univariate analysis was used to describe the characteristics of mothers of toddlers and toddlers then displayed in the form of a frequency, distribution table. Analytic analysis used bivariate analysis, namely, to test the relationship between maternal knowledge, maternal attitudes, hand washing behavior, exclusive breastfeeding history, maternal education, maternal employment status with the incidence of diarrhea using the Chi Square test.

RESULT

1. Analysis univariate

Table 1. Frequency Distribution Based on Age of Toddlers in The Tarus health centers Working Area, Kupang Regency

| Age of Toddler | Incidence of Diarrhea | | | | Total | |
|----------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | n | % |
| | n | % | n | % | | |
| 12-23 months | 14 | 21,5 | 14 | 21,5 | 28 | 21,5 |
| 24-35 months | 29 | 44,6 | 29 | 44,6 | 58 | 44,6 |
| 36-47 months | 19 | 29,2 | 19 | 29,2 | 38 | 29,2 |
| 48-59 months | 3 | 4,6 | 3 | 4,6 | 6 | 4,6 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Table 1 shows that of the 130 toddlers, the most in the age group of 23-35 months as many as 58 toddlers (44.6%) consisting of 29 toddlers in the case group and 29 toddlers in the control group. The lowest distribution of respondents was in the age group of 48-59 months with a total of 6 toddlers (4.6%) consisting of 3 toddlers in the case group and 3 toddlers in the control group.

Table 2 Frequency Distribution Based on Gender of Toddlers in The Tarus Health Centers Working Area, Kupang Regency

| Gender of Toodler | Incidence of Diarrhea | | | | Total | |
|-------------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | N | % |
| | n | % | n | % | | |
| Male | 37 | 56,9 | 32 | 49,2 | 69 | 53,1 |
| Female | 28 | 43,1 | 33 | 50,8 | 61 | 46,9 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Based on Table 2 shows that of the 130 toddlers, 69 toddlers (53.1%) were male consisting of 37 toddlers in the case group (56.9%) and 32 toddlers in the control group (49.2%) and as many as 61 toddlers (46.9%) were female consisting of 28 toddlers in the case group (43.1%) and 33 toddlers in the control group (50.8%).

Table 3 Frequency Distribution Based on Age of Mother and Toddler in Working Area of Tarus Health Centers, Kupang Regency

| Mother's Age | Incidence of Diarrhea | | | | Total | |
|-----------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | n | % |
| | n | % | n | % | | |
| 25-29 years old | 13 | 20,0 | 10 | 15,4 | 23 | 17,7 |
| 30-34 years old | 30 | 46,2 | 27 | 41,5 | 57 | 43,8 |
| 35-39 years old | 22 | 33,8 | 28 | 43,1 | 50 | 38,5 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Based on table 3 shows that the age group of mothers of toddlers is mostly found in age 30-34 years (43.8%) consisting of 30 mothers in the case group (46.2%) and 27 mothers in the control group (41.5%) while the lowest age group was in the age group 25-29 years as many as 23 mothers (17.7%) consisting of 13 mothers in the case group (20.0%) and 10 mothers in the control group (15.4%).

Table 4 Frequency Distribution Based on the Location of Residence of Mothers of Toddlers in the Working Area of Tarus Health Centers, Kupang Regency

| Village | Incidence of Diarrhea | | | | Total | |
|-------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | n | % |
| | n | % | n | % | | |
| Tarus | 25 | 38,5 | 25 | 38,5 | 50 | 38,5 |
| Tanah Merah | 10 | 15,4 | 10 | 15,4 | 20 | 15,4 |
| Penfui | 8 | 12,3 | 8 | 12,3 | 16 | 12,3 |
| Noelbaki | 8 | 12,3 | 8 | 12,3 | 16 | 12,3 |
| Oelnasi | 6 | 9,2 | 6 | 9,2 | 12 | 9,2 |
| Oelpuah | 2 | 3,1 | 2 | 3,1 | 4 | 3,1 |
| Mata air | 2 | 3,1 | 2 | 3,1 | 4 | 3,1 |
| Oebelo | 4 | 6,2 | 4 | 6,2 | 8 | 6,2 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Table 4 shows that the location of residence of mothers of toddlers is mostly found in Tarus with a total of 50 mothers (38.5%) consisting of 25 mothers in the case group and 25 mothers in the control group, while the location of residence of mothers of toddlers is the lowest in Oelpuah and Mata Air villages with 4 mothers each.

Table 5 Frequency Distribution based on the Last education of Mothers of Toddlers in the Tarus Health Centers Working Area, Kupang Regency

| Education Last Mom | Incidence of Diarrhea | | | | Total | |
|--------------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | n | % |
| | n | % | n | % | | |
| SD | 11 | 16,9 | 4 | 0,2 | 15 | 11,5 |
| SMP | 31 | 47,7 | 18 | 27,7 | 49 | 37,7 |
| SMA | 18 | 27,7 | 32 | 49,2 | 50 | 38,5 |
| Perguruan Tinggi | 5 | 7,7 | 11 | 16,9 | 16 | 12,3 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Based on table 5, it shows that the last education of mothers of toddlers is mostly high school. 50 mothers (38.5%) consisting of 18 mothers in the case group (27.7%) and 32 mothers in the control group (49.2%) and the lowest number of mothers with tertiary education were 16 mothers (12.3%) consisting of 5 mothers in the case group (7.7%) and 11 mothers in the control group (16.9%).

Table 6 Frequency Distribution based on Type of Work of Mothers in the Tarus Health Centers Working Area, Kupang Regency

| Type of Work Mom | Incidence of Diarrhea | | | | Total | |
|-----------------------|-----------------------|------|---------|------|-------|------|
| | Case | | Control | | n | % |
| | N | % | n | % | | |
| Housewife/not working | 52 | 80,0 | 43 | 66,2 | 95 | 73,1 |
| Farmer | 8 | 12,3 | 13 | 20,0 | 21 | 16,2 |
| Governments Employees | 0 | 0 | 2 | 3,1 | 2 | 1,5 |
| Private Employee | 0 | 0 | 1 | 1,5 | 1 | 0,8 |
| Enterpreneurship | 5 | 7,7 | 6 | 9,2 | 11 | 8,5 |
| Total | 65 | 100 | 65 | 100 | 130 | 100 |

Table 6 shows that mothers of toddlers with the most jobs are housewives. With a total of 95 mothers (73.1%) consisting of 52 mothers in the case group (80.0%) and 43 mothers in the control group (66.2%), while the least type of maternal employment is private employees with a total of 1 mother in the control group (0.8%).

2. Analysis Bivariate

Table 7 Relationship Between Maternal Knowledge and The Incidence of Diarrhea in Toddler

| Mother's knowledge | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|--------------------|-----------------------|------|---------|------|-------|------|---------------------|---------|
| | Case | | Control | | n | % | | |
| | n | % | n | % | | | | |
| Not good | 38 | 58,5 | 17 | 26,2 | 55 | 42,3 | 3,974 (1,894-8,339) | 0,000 |
| Good | 27 | 41,5 | 48 | 73,8 | 75 | 57,7 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on table 7 of 65 toddlers who had diarrhea, as many as 38 mothers of toddlers (58.5%) had poor knowledge and as many as 27 mothers of toddlers (41.5%) had good knowledge. While of the 65 toddlers who did not experience diarrhea there were 17 mothers of toddlers (26.2%) who had poor knowledge and as many as 48 mothers of toddlers (73.8%) had good knowledge. The results of the analysis of the relationship between maternal knowledge with the incidence of diarrhea in toddlers with chi square test obtained p value of 0.00 (p value <0.05) means that there is a significant relationship between maternal knowledge with the incidence of diarrhea in toddlers in the Tarus Health Center working area. Based on the results of the analysis obtained Odds Ratio value of 3.97 (OR value > 1) means that toddlers who have mothers with poor knowledge have a risk of diarrhea 3.97 times greater than toddlers with mothers who have good knowledge. The Confidence Interval value (1.894 - 8.339) passes the number one, which means that there is a significant relationship between maternal knowledge and the incidence of diarrhea in toddlers in the Tarus Health centers working area of Kupang Regency.

Table 8 Relationship between maternal attitude and the incidence of diarrhea in toddlers

| Mom's attitude | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|----------------|-----------------------|------|---------|------|-------|------|---------------------|---------|
| | Case | | control | | n | % | | |
| | n | % | n | % | | | | |
| Negative | 39 | 60,0 | 16 | 24,6 | 55 | 42,3 | 4,594 (2,167-9,739) | 0,000 |
| Positive | 26 | 40,0 | 49 | 75,4 | 75 | 57,7 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on table 8 of 65 toddlers who had diarrhea, 39 mothers of toddlers (60.0%) As many as 26 mothers of toddlers (40.0%) had a positive attitude, while of the 65 toddlers who did not experience diarrhea, as many as 16 mothers of toddlers (24.6%) had a negative attitude and as many as 49 mothers of toddlers (75.4%) had a positive attitude. The results of the analysis of the relationship between maternal attitudes with the incidence of diarrhea in toddlers with chi square test obtained p value of 0.00 (p value <0.05) means that there is a significant relationship between maternal attitudes with the incidence of diarrhea in toddlers in the Tarus Health Center working area. Based on this analysis, the Odds Ratio value of 4.59 (OR>1) means that toddlers with mothers who have a negative attitude have a risk of diarrhea 4.59 times greater than toddlers with mothers who have a positive attitude. Confidence Interval (2,167-9,739) passes the number one, meaning that there is a significant relationship between maternal attitudes and the incidence of diarrhea in toddlers in the working area of Tarus Health centers Kupang Regency.

Table 9 Relationship between Handwashing Behavior and the Incidence of Diarrhea in Toddlers

| Handwashing behavior | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|----------------------|-----------------------|------|---------|------|-------|------|---------------------|---------|
| | Case | | Control | | n | % | | |
| | n | % | n | % | | | | |
| Bad | 46 | 70,8 | 23 | 35,4 | 69 | 53,1 | 4,421 (2,114-9,245) | 0,000 |
| Good | 19 | 29,2 | 42 | 64,6 | 61 | 46,9 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on table 9 of 65 toddlers who experienced diarrhea, 46 mothers of toddlers (70.8%) As many as 19 mothers of toddlers (29.2%) have good hand washing behavior, while of the 65 toddlers who do not have diarrhea, as many as 23 mothers of toddlers (35.4%) have poor hand washing behavior and as many as 42 mothers of toddlers (64.6%) have good hand washing behavior. The results of the analysis of the relationship between hand washing behavior with the incidence of diarrhea in toddlers with chi square test obtained a p value of 0.00 (p value <0.05) means that there is a significant relationship between hand washing behavior with the incidence of diarrhea in toddlers in the Tarus health centers working area. Based on this analysis, the Odds Ratio value of 4.42 (OR>1) means that toddlers who have mothers with poor hand washing behavior have a risk of developing diarrhea 4.42 times greater than toddlers who have mothers with good hand washing behavior. The Confidence Interval value (2.114-9.245) passes the number one, meaning that there is a significant relationship between hand washing behavior and the incidence of diarrhea in toddlers in the Tarus health center working area of Kupang Regency.

Table 10 Relationship between Exclusive Breastfeeding History and Incidence of diarrhea in toddlers

| Breastfeeding history Exclusive | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|---------------------------------|-----------------------|------|---------|------|-------|------|---------------------|---------|
| | Case | | Control | | N | % | | |
| | n | % | n | % | | | | |
| No breast milk Eksklusif | 39 | 60,0 | 19 | 29,2 | 58 | 44,6 | 3,632 (1,751-7,531) | 0,001 |
| Eksklusif Breastfeeding | 26 | 40,0 | 46 | 70,8 | 72 | 55,4 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on Table 10 of 65 toddlers who had diarrhea as many as 39 toddlers (60.0%) had a diarrhea diagnosis. As many as 26 toddlers (40.0%) with a history of exclusive breastfeeding, while of the 65 toddlers who did not experience diarrhea, 19 toddlers (29.2%) had a history of not receiving exclusive breastfeeding and as many as 46 toddlers (70.8%) with a history of exclusive breastfeeding. The results of the analysis of the relationship between exclusive breastfeeding history and the incidence diarrhea in toddlers with the chi square test obtained a p value of 0.001 (p value <0.05), meaning that there is a significant relationship between exclusive breastfeeding history and the incidence of diarrhea in toddlers in the Tarus health centers working area. Based on this analysis, the Odds Ratio value is 3.63 (OR>1), meaning that toddlers with a history of exclusive breastfeeding are more likely to have diarrhea history of not being exclusively breastfed has a risk of diarrhea 3.63 times greater than toddlers with a history of being exclusively breastfed. The Confidence Interval value (1.751-7.531) passes the number one, which means that there is a significant relationship between the history of exclusive breastfeeding and the incidence of diarrhea in toddlers in the working area of Tarus health centers Kupang Regency.

Table 11 Relationship between mother's education level and the incidence of diarrhea in toddlers

| Mother's Education Level | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|--------------------------|-----------------------|------|---------|------|-------|------|--------------------|---------|
| | Case | | Control | | n | % | | |
| | n | % | n | % | | | | |
| Low | 40 | 61,5 | 26 | 40,0 | 66 | 50,8 | 2,400(1,187-4,854) | 0,023 |
| High | 25 | 38,5 | 39 | 60,0 | 64 | 49,2 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on table 11 of 65 toddlers who had diarrhea, as many as 40 mothers of toddlers (61.5%) as many as 25 mothers of toddlers (38.5%) have a high education, while of the 65 toddlers who do not experience diarrhea as many as 26 mothers of toddlers (40.0%) have a low education and as many as 39 mothers of toddlers (60.0%) have a high education. The results of the analysis of the relationship between the mother's education level with the incidence of diarrhea in toddlers with chi square test obtained a p value of 0.023 (p value <0.05) means that there is a significant relationship between the mother's education level with the incidence of diarrhea in toddlers in the Tarus Health Center working area. Based on the analysis, the Odds Ratio value is 2.400 (OR>1), meaning that toddlers with mothers who have low education have a risk of diarrhea 2.40 times greater than toddlers with mothers who have high education. The Confidence Interval value (1.187-4.854) passes the number one, which means that there is a significant relationship between the mother's education level and the incidence of diarrhea in toddlers in the working area of Tarus health centers Kupang Regency.

Table 12 Relationship between mother's employment status and the incidence of diarrhea in toddlers

| Mother's Employment Status | Incidence of Diarrhea | | | | Total | | OR 95% CI | p value |
|----------------------------|-----------------------|------|---------|------|-------|------|---------------------|---------|
| | Case | | Control | | n | % | | |
| | n | % | n | % | | | | |
| Work | 13 | 20,0 | 22 | 33,8 | 35 | 26,9 | 0,489 (0,220-1,083) | 0,114 |
| Not Working | 52 | 80,0 | 43 | 66,2 | 95 | 73,1 | | |
| Total | 65 | 100 | 65 | 100 | 130 | 100 | | |

Based on Table 12 of 65 toddlers who had diarrhea, as many as 13 mothers of toddlers (20.0%) worked and as many as 52 mothers of toddlers (80.0%) who did not work, while of the 65 toddlers who did not experience diarrhea, 22 mothers of toddlers (33.8%) who worked and as many as 43 mothers of toddlers (66.2%) who did not work. The results of the analysis of the relationship between maternal employment status and the incidence of diarrhea in toddlers with the chi square test obtained a p value of 0.114 (p value >0.05), meaning that there is no significant relationship between maternal employment status and the incidence of diarrhea in toddlers in the Tarus health center work area.

DISCUSSION

1. Relationship between Maternal Knowledge and the Incidence of Diarrhea in Toddlers in the Tarus health centers Working Area, Kupang Regency

According to Notoatmodjo (2010) knowledge is the result of knowing and this occurs after doing the following sensing of a particular object. Sensing occurs through the five human senses; most human knowledge is obtained through the eyes (vision) and ears (hearing). Based on the results of statistical tests obtained results, there is a significant relationship between the level of maternal knowledge with the incidence of diarrhea in toddlers in the working area of Tarus health center Kupang Regency. The results of interviews with respondents in the working area of Tarus health center, Kupang Regency, many mothers of toddlers who experience diarrhea do not know the causes of diarrhea in toddlers, how to prevent diarrhea and the consequences of diarrhea and some mothers do not even know the definition of diarrhea. A mother's knowledge about diarrhea includes the definition of diarrhea, signs, and symptoms of diarrhea, causes and classification of diarrhea will greatly affect the actions that will be taken by a mother. Knowledge or cognitive domain is a domain factor that is very important in shaping a person's actions (over behavior) in terms of knowledge about preventing diarrhea in toddlers. The role of mothers is very important for the health of toddlers, because mothers are the closest people to toddlers both when eating, bathing, and playing mothers are more involved. The results of this study are in accordance with research from Arindari and Yulianto (2018) on the relationship between maternal knowledge and attitudes with the incidence of diarrhea in toddlers in the Punti Kayu Palembang Health Center work area showing that there is a significant relationship between maternal knowledge and the incidence of diarrhea in toddlers in the Punti Kayu Palembang Health Center work area. Research by Rahmaniu, Dangnga and Madjid (2022) on the relationship between maternal knowledge and the incidence of diarrhea in toddlers in the working area of the Lappadekota Parepare Health Center also found that there was a significant relationship between maternal knowledge and the incidence of diarrhea in toddlers in the working area of the Lappadekota Parepare Health Center.

2. Relationship between Maternal Attitudes and the Incidence of Diarrhea in Toddlers in the Working Area of Tarus Puskesmas, Kupang Regency

Attitude is a reaction or response that is still closed from a person to a stimulus or object. Attitude clearly shows the connotation of the suitability of reactions to certain stimuli which in everyday life are emotional reactions to social stimuli. The attitude is still a closed reaction, not an open reaction or open behavior. Attitude is a readiness to react to objects in a certain environment because of the attitude appreciation of the object (Siregar, 2020). The results of the analysis of the relationship between maternal attitudes and the incidence of diarrhea in toddlers showed that there was a significant relationship between maternal attitudes and the incidence of diarrhea in toddlers in the Tar us Health Center working area. The results of interviews with respondents in the working area of Tarus health centers Kupang Regency, many mothers of toddlers whose toddlers experience diarrhea have a negative attitude this is because many mothers who

answered disagree on the questionnaire statement about feeding little by little but often to children who are diarrhea, giving ORS to children as the first action of diarrhea treatment, hand washing behavior before feeding the child, especially after cleaning the child's stool, and there are mothers who answer disagree on the statement about bringing children with diarrhea to health facilities. This is in line with research conducted by Ridawati and Nugroho (2021) on the relationship between maternal attitudes and efforts to prevent diarrhea in toddlers in the working area of the Air Lais Health Center, it was found that there was a relationship between maternal attitudes and the prevention of diarrheal diseases in toddlers. Research by Rismayani, Arlenti and Elvina (2022) on the relationship between attitudes, education, and the environment with the incidence of diarrhea in toddlers, also found that there was a relationship between maternal attitudes and diarrhea in children at the Sukamerindu Bengkulu Health Center location.

3. The Relationship between Handwashing Behavior and the Incidence of Diarrhea in Toddlers in the Tarus health centers Working Area, Kupang Regency

Hand washing behavior is an activity carried out by someone in cleaning the palms, backs of hands and fingers to make them clean from dirt and kill disease-causing germs that are detrimental to human health and make hands smell good (RI, 2007). The results of the analysis of the relationship between hand washing behavior and the incidence of diarrhea in toddlers in the Tarus health centers work area of Kupang Regency found that there was a significant relationship between the relationship between hand washing behavior and the incidence of diarrhea in toddlers in the Tarus health centers work area. The results of interviews with mothers of toddlers in the working area of Tarus health centers Kupang Regency, many mothers of toddlers still do not wash their hands before feeding their children. This study is in line with the research of Sartika (2020) on the relationship between knowledge and hand washing behavior of mothers with the incidence of diarrhea in children under five in the Banjarmasin Terminal Health Center work area, the results showed that there was a relationship between the mother's hand washing behavior and the incidence of diarrhea in children under five in the Banjarmasin Terminal Health Center work area, 2000 year. Research conducted by Pratiwi (2019) with the title of the relationship between hand washing behavior and the incidence of diarrhea in children under five in TK -TB-TKIT Salman Alfarisi District Umbulharjo Yogyakarta City also obtained the results of the analysis that there is a relationship between the mother's hand washing behavior and the incidence of diarrhea in children under five.

4. The Relationship between Exclusive Breastfeeding History and the Incidence of Diarrhea in Toddlers in the Tarus Health Centers Working Area, Kupang Regency

Exclusive breastfeeding means that infants are fed only breast milk, without additional liquids such as water, formula, tea water, orange, honey, and without additional solid foods such as milk porridge, rice

porridge, team, papaya biscuits and bananas. Early solid/additional feeding can interfere with exclusive breastfeeding and increase infant morbidity. After six months of exclusive breastfeeding, breastfeeding should not be stopped. Along with the introduction of food to the baby, breastfeeding is still carried out, preferably breastfeeding for two years according to WHO recommendations (Umar, 2021). The results of the analysis of the relationship between exclusive breastfeeding history and the incidence of diarrhea in toddlers in the Tarus health centers working area of Kupang Regency found that there was a significant relationship between the exclusive breastfeeding history and the incidence of diarrhea in toddlers in the Tarus health centers working area. Based on the results of interviews with mothers of toddlers, there are still mothers who give drinks other than breast milk to toddlers, for example, formula milk has been given to toddlers during the first 6 months. This study is in line with research conducted by Sari (2021) on the relationship between exclusive breastfeeding history and the incidence of diarrhea in toddlers at Ibunda Hospital, Bagan Sinembah District, Rokan Hilir Regency, it was found that there was a significant relationship between exclusive breastfeeding history and the incidence of diarrhea in toddlers at Ibunda Hospital, Bagan Sinembah District, Rokan Hilir Regency. Research by Chodijah (2022) on the relationship between exclusive breastfeeding and maternal education level with the incidence of diarrhea in toddlers at Pakjo Palembang health centers also obtained the results of the analysis that there was a significant relationship between exclusive breastfeeding and the incidence of diarrhea in toddlers at Pakjo Palembang health centers in 2022.

5. Relationship between Mother's Education Level and the Incidence of Diarrhea in Toddlers in the Working Area of Tarus Health Centers, Kupang Regency

Education is an effort to develop personalities and abilities inside and outside of school (both formal and non-formal, lasting a lifetime). Education is a process of changing the attitudes and behavior of a person or group and an effort to mature humans through teaching and training efforts. Education affects the learning process. The higher a person's education, the easier it is for that person to receive information. With higher education, a person will tend to get information, both from other people and from the mass media. The more information that enters, the more knowledge is obtained about health (Budiman, 2013). The results of the analysis of the relationship between maternal education level and the incidence of diarrhea in toddlers showed that there was a significant relationship between maternal education and the incidence of diarrhea in toddlers in the Tarus Health Center working area, Kupang Regency. This study is in line with the research of Fitriani, Darmawan and Puspasari (2021) on the analysis of risk factors for diarrhea in toddlers in the Pakuan Baru health centers work area of Jambi City with the results showing that there is a significant relationship between the mother's education level and the incidence of diarrhea in toddlers in the Pakuan health centers Region. New Jambi City in 2020. Research conducted by Supernova (2022) with

the title of the relationship between socio-economic and maternal education with the incidence of diarrhea in toddlers who come for treatment at the Maha Prana Lubuk Linggau Health Center also found that there was a significant relationship between maternal education and the incidence of diarrhea in toddlers who came for treatment at the Maha Prana Lubuk Linggau health centers.

6. Analysis of the Relationship between Maternal Employment Status and the Incidence of Diarrhea in Toddlers in the Tarus health centers Working Area, Kupang Regency

Work is something that is done to earn a living or livelihood by individuals to meet their daily needs, work is generally related to the level of education and income (RI, 2007). Mothers who work from morning to evening do not have enough time for children and family (Rahayu *et al.*, 2018). Analysis of the relationship between maternal employment status and the incidence of diarrhea in toddlers showed that there was no significant relationship between maternal employment status and the incidence of diarrhea in toddlers in the working area of Tarus health centers, Kupang Regency. Based on this, researchers assume that mothers who do not work or housewives have more free time and full time to pay attention and care for their children, with activities outside the home, making the mother's activities to nurture and care for toddlers limited, respondents may be assisted by their families. Parenting done to toddlers apart from the mother (respondent) is also from her family so that there may be changes in parenting patterns. This study is in line with research conducted by Evayanti, Purna and Aryana (2014) with the title of factors associated with the incidence of diarrhea in toddlers who seek treatment at the Tabanan General Hospital Agency, the results of the analysis show that there is no relationship between maternal work and the incidence of diarrhea in toddlers who seek treatment at BRSU Tabanan. Research conducted by Fitriani, Darmawan and Puspasari (2021) on the analysis of risk factors for the occurrence of diarrhea in toddlers in the Pakuan Baru Health Center work area of Jambi City also obtained analysis results showing that there was no significant relationship between the mother's employment status and the incidence of diarrhea in toddlers in the Pakuan Baru Health Center Area of Jambi City in 2020.

CONCLUSION

Conclusion, that the variables of maternal knowledge, maternal attitude, hand washing behavior, breastfeeding history exclusive and maternal education there is a significant relationship with the incidence of diarrhea in toddlers, and the variable of maternal employment status has no significant relationship with the incidence of diarrhea in toddlers. It is expected that the community, especially mothers of toddlers, pay more attention to the living environment, clean living behavior such as washing hands before and after giving children to eat and increasing knowledge by participating in socialization or counseling activities from posyandu or existing health workers.

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