

FACTORS INFLUENCING THE INCIDENCE OF DIARRHEA

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ABSTRACT

Diarrhea remains a major cause of morbidity and mortality due to infections in infants and children worldwide. Diarrhea is responsible for one-third of child deaths, resulting in the loss of two million children per year. The aim of this study is to identify the factors influencing the incidence of diarrhea in the working area of Puskesmas Natar, South Lampung Regency. This is a quantitative study with a cross-sectional research design. The population in this study consists of mothers who have children under five years old experiencing diarrhea and are registered at Puskesmas Natar, South Lampung Regency, totaling 751 respondents. The sample size in this study is 88 respondents. The sampling technique used in this study is stratified random sampling. Based on statistical tests, the knowledge variable showed a p-value of $0.010 < 0.05$ (OR = 3.095), indicating a relationship between knowledge and the incidence of diarrhea. The attitude variable showed a p-value of $0.041 < 0.05$ (OR = 2.444). There is a relationship between knowledge, exclusive breastfeeding, and attitude with the incidence of diarrhea.

Keywords: attitude; exclusive breastfeeding; diarrhea; knowledge

INTRODUCTION

Diarrhea remains the leading cause of morbidity and mortality due to infection in infants and children worldwide. Diarrhea is responsible for one third (29%) of under-five deaths, resulting in the loss of two million children per year (World Health Organization (WHO 2013)). Diarrhea is the leading cause of death in children under five in Indonesia with a percentage of the leading cause of death in children under five at 5.8%. (Kemenkes RI, 2023) Based on the 2021 Indonesian Health Profile data, the number of diarrhea cases in toddlers in Indonesia was 974,268 cases with diarrhea service coverage in toddlers of 26.4%. Apart from that, diarrhea is the second contributor to death after pneumonia in the post neonatal group (aged 29 days - 11 months), namely 14%, up from 2020, namely 9.8% of deaths. In the toddler group (12 - 5 months), diarrhea is the number one cause of death at 10.3% or an increase from 2020 of 4.55%. The prevalence of diarrhea in children under five based on the 2021 Indonesian Nutrition Status Survey is 9.8%. From these national data, it appears that diarrhea remains the highest cause of morbidity and mortality among other diseases among children under five despite a decrease in the number of cases. (Kemenkes RI, 2023)

Based on the Lampung Provincial Health Office Profile reported that the transmission of diarrhea disease was 18,844 cases in 2023. The incidence of diarrhea in South Lampung Regency in 2023 was the highest at 4,773 cases, followed by Bandar Lampung City district at 4,474 cases and Central Lampung Regency at 1,756 cases. (Dinas Kesehatan Provinsi, 2023) Diarrhea is defined as more than 3 liquid or watery bowel movements per day (or more often than usual). Diarrhea is the leading cause of malnutrition in children under 5 years old (Setiawan, A., 2022). The disease is usually caused by an infection in the gastrointestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms. Transmission of infection occurs through contaminated food or drinking water, or from person to person due to poor hygiene. Interventions to prevent

diarrhea include the use of safe drinking water, adequate sanitation, and handwashing with soap. Diarrhea should be treated with oral rehydration solution (ORS), which contains clean water, sugar, and salt (Saharudin et al., 2021).

The things that cause a person to be susceptible to diarrheal disease in toddlers are poor community behavior and poor environmental sanitation. Diarrhea can be fatal if not treated seriously because the body of toddlers consists mostly of water, meat, so that in the event of diarrhea it is very easy to get dehydrated (Wulandari, 2009). A number of efforts have been made to reduce morbidity and mortality in children under five caused by diarrhea. The program is a multisectoral effort that is directly related to efforts to eradicate environment-based infectious diseases. The policies and strategies of the Ministry of Health in order to control diarrheal disease through the management of diarrhea patients, epidemiological surveillance (Dinkes, 2014). There are many factors that directly or indirectly contribute to diarrhea, including agent, host, environment and behavior. Host factors lead to increased susceptibility to diarrhea, the most dominant environmental factors are clean water supply facilities and fecal disposal. These two factors interact together with human behavior, one of which is the habit of washing hands with soap. If environmental factors are unhealthy because they are contaminated with diarrhea germs and accumulate with unhealthy human behavior as well, then diarrhea transmission can easily occur (Kemenkes RI, 2021).

In order to collect data for a study on the incidence of diarrhea in children under five years of age, researchers conducted a preliminary study at the Natar Health Center and surrounding areas. Demographic data showed that the population in the Natar area reached 17,358 people, with a total of 1,381 children under five. The preliminary study at Puskesmas Natar revealed that in 2023, 751 cases of diarrhea in children under five were recorded. Furthermore, at the auxiliary health center located in the same area, there were 10 cases of diarrhea in toddlers in the last month. Based on the above background, the researcher is interested in further research on "Factors Affecting the Incidence of Diarrhea at Puskesmas Natar South Lampung"

METHOD

This type of research is Quantitative Observational. The research design used is cross sectional. This research was conducted from June 17, 2024 to July 1, 2024. The research location was at the Natar Health Center, South Lampung Regency Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics (Sugiyono, 2009). The population in this study were 751 mothers who had toddlers who experienced diarrhea at the Natar Health Center in South Lampung. Based on the results of the minimum sample calculation above, the minimum sample size is 88 respondents. An independent variable is an activity stimulus that is manipulated by research to create an impact on the dependent variable. In this study, the independent variables were knowledge, attitude, and exclusive breastfeeding. The dependent variable is the variable whose value is determined by other variables. In this study, the dependent variable was the incidence of diarrhea.

RESULT AND DISCUSSION

Based on table 4.4, it is known that out of 88 respondents, 40 respondents (45.5%) experienced diarrhea in toddlers and 48 respondents (54.2%) did not experience diarrhea. As many as 44 respondents (50.0%) had good knowledge, and as many as 44 respondents (50.0%) had sufficient

knowledge, as many as 50 respondents (56.8%) had good attitudes, as many as 38 respondents (43.2%) had unfavorable attitudes. A total of 38 respondents 50 (56.8%) had a history of exclusive breastfeeding, and as many as 38 respondents (43.2%) were not exclusive breastfeeding.

Table 1.
Relationship between knowledge and diarrhea incidence

Baik	30	68,2	$\frac{1}{4}$	31,8	44	100
Cukup	18	40,9	26	59,1	44	100
Total	48	54,5	40	45,5	88	100

Table 1, it is known that out of 88 respondents with good knowledge, 44 respondents had toddlers who experienced diarrhea as many as 14 respondents (31.8%). Of the 44 respondents with sufficient knowledge, 26 respondents (59.1%) had toddlers who experienced diarrhea. The statistical test results obtained p-value = 0.01 <0.05 with an Odds Ratio (OR) value of 3.095 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between knowledge and the incidence of diarrhea with an Odds Ratio (OR) value of 3.095 which means that respondents with sufficient knowledge have a 3.095 times chance of diarrhea compared to respondents who have good knowledge.

Table 2.
Attitude Relationship of Diarrhea Incidence

	f	%	f	%	f	%
Baik	31	64,0	18	36,0	50	100
Kurang	16	42,1	22	57,9	38	100
Total	48	54,5	40	45,5	88	100

Table 2, it is known that out of 50 respondents with good attitudes, 18 respondents (36.0%) have toddlers who experience diarrhea. Of the 38 respondents with a poor attitude, 22 respondents (57.9%) had toddlers who experienced diarrhea. The statistical test results obtained p-value = 0.041 <0.05 with an Odds Ratio (OR) value of 2.444 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between attitude and the incidence of diarrhea with an Odds Ratio (OR) value of 2.444 which means that respondents with a sufficient attitude have a 2.444 times chance of diarrhea compared to respondents who have a good attitude.

Table 3.
The relationship between exclusive breastfeeding and diarrhea

	f	%	f	%	f	%
ASI eksklusif	27	71,1	11	28,9	38	100
Tidak ASI	21	41,0	29	58,0	50	100
Total	48	54,5	40	45,5	88	100

Based on Table 3, it is known that of the 38 respondents with exclusive breastfeeding, 11 respondents (28.9%) had toddlers who experienced diarrhea and 27 respondents (71.1%) did not experience diarrhea. Of the 50 respondents with a history of not exclusively breastfed, 29 respondents (58.0%) had toddlers who experienced diarrhea and 21 respondents (41.0%) did not experience diarrhea. The statistical test results obtained p-value = 0.007 <0.05 with an Odds Ratio (OR) value of 3.390 (Ho is rejected and Ha is accepted), it can be concluded that there is a relationship between exclusive breastfeeding and the incidence of diarrhea. with an Odds Ratio (OR) value of 3.390 which means that respondents with a history of not exclusively breastfeeding

have a 3.390 times chance of diarrhea compared to respondents who have a history of exclusive breastfeeding.

Relationship between knowledge and diarrhea incidence

Based on the results of statistical tests obtained $p\text{-value} = 0.01 < 0.05$ with an Odds Ratio (OR) value of 3.095 (H_a is accepted and H_o is rejected), it can be concluded that there is a relationship between knowledge and the incidence of diarrhea with an Odds Ratio (OR) value of 3.095 which means that respondents with sufficient knowledge have a 3.095 times chance of diarrhea compared to respondents who have good knowledge. This finding is in line with the research of Fitriah, N. E., Neherta, M., & Sari, I. M. (2024) which also found a relationship between knowledge and the incidence of diarrhea with a $p\text{-value} = 0.000 < 0.05$. Research by Putri, F.R., Susyanto, E., & Erni, A. (2024) showed an association between knowledge and the incidence of diarrhea with a $p\text{-value} = 0.007 < 0.05$. Research conducted by Luh and Mahayana (2020) also found a significant relationship between knowledge and the incidence of diarrhea.

Knowledge is something that is present and materialized in a person's soul and mind due to contact reactions, and relationships with the surrounding environment and nature. This knowledge includes emotions, traditions, skills, information, beliefs and thoughts (Iswari, 2021). In line with Jannah's research (2022) that good knowledge will be able to apply in daily activities and have an impact on decreasing the incidence of diarrhea but not so, there are some mothers who have a good level of knowledge but do not apply it in daily activities which causes no decrease in the incidence of diarrhea. Researchers argue that good knowledge does not necessarily determine a good attitude. Even though the knowledge is good, if it is not applied daily, it will have a bad impact on health. Apart from that, Puskesmas needs to improve education and counseling programs regarding the prevention of infectious diseases such as diarrhea. This education must be delivered continuously and use methods that are easily understood by the community, such as through simulations, demonstrations, and the use of visual media.

Relationship between attitude and incidence of diarrhea

The statistical test results obtained $p\text{-value} = 0.041 < 0.05$ with an Odds Ratio (OR) value of 2.444 (H_a is accepted and H_o is rejected), it can be concluded that there is a relationship between attitude and the incidence of diarrhea with an Odds Ratio (OR) value of 2.444 which means that respondents with a sufficient attitude have a 2.444 times chance of diarrhea compared to respondents who have a good attitude. The results of research by Luh, S. & Mahyana, I. (2020), showed that from the results of research on 40 respondents, it was found that respondents with positive attitudes found that a small proportion of their toddlers had diarrhea and from respondents with negative attitudes, most of the respondents had diarrhea. The results of statistical tests showed a relationship between attitude and the incidence of diarrhea in infants with a $p\text{-value} = 0.000 < 0.05$. Attitudes are very influential in the management of diarrhea at home, for example, poor weaning actions will lead to diarrhea in children. Research conducted by Arindari, D.R, & Yulianto, E. (2018), shows statistically that there is a relationship between maternal attitudes and the incidence of diarrhea in infants with a $p\text{-value} = 0.001 < 0.05$. Attitude is a reaction or response that is still closed from a person to a stimulus or benefit object. This attitude cannot be directly seen but can only be interpreted first from closed behavior. Real attitude shows the suitability of reactions to certain stimuli (Notoatmodjo, 2019). According to Azwar (2022), attitude is a person's readiness to act on certain things. Based on the results, theory, and research terkait researchers argue that the attitude

of the mother is also needed in the prevention of diarrhea, if the mother has a good attitude then the incidence of diarrhea in toddlers can be prevented, based on the results of the mother's attitude table about diarrhea shows that respondents who have a good attitude more than with a less good attitude. This is in accordance with the existing theory, that the mother's attitude is very influential to prevent diarrhea.

The relationship between exclusive breastfeeding and the incidence of diarrhea

Exclusive breastfeeding is the provision of breast milk alone to infants aged 0-6 months, without the addition of other liquids such as formula, orange, honey, tea water, water and solid foods such as bananas, milk porridge, biscuits, rice porridge, and rice (Roesli, 2022). The statistical test results obtained $p\text{-value} = 0.007 < 0.05$ with an Odds Ratio (OR) value of 3.390 (H_0 is rejected and H_a is accepted), it can be concluded that there is a relationship between exclusive breastfeeding and the incidence of diarrhea. with an Odds Ratio (OR) value of 3.390 which means that respondents with a history of not exclusively breastfeeding have a 3.390 times chance of diarrhea compared to respondents who have a history of exclusive breastfeeding. In line with research conducted by Eunike, D., & Nataprawira, S. M. D (2021) that there is a relationship between the incidence of diarrhea and exclusive breastfeeding with $p\text{-value} = 0.001 < 0.05$. Toddlers who get exclusive breastfeeding will be healthier and rarely get sick without exclusive breastfeeding supported by research conducted by Heriyeni, H., & Wiji, R.N. The results (2024) show that there is a relationship between exclusive breastfeeding and the incidence of diarrhea in infants with $p\text{-value} = 0.016 < 0.05$. This means that there is a relationship between exclusive breastfeeding history and the incidence of diarrhea in toddlers in the Arhanud 13 PBY Clinic Working Area in 2024.

In line with research conducted by Adikarya, I. P. G. D., Nesa, N. N. M., & Sukmawati, M. (2019) exclusive breastfeeding for 6 months must be increased because it has a relationship with the incidence of acute diarrhea. In this study, it was found that patients with acute diarrhea in the exclusive breastfeeding group were 17 children and non-exclusive breastfeeding was 31 children. Subjects who did not experience acute diarrhea in the exclusive breastfeeding group were 28 children and in the non-exclusive breastfeeding group were 14 children with a $p\text{-value} = 0.003 < 0.05$. Many factors cause children to experience diarrhea, one of which is breastfeeding. Exclusive breastfeeding serves as a protective factor against the incidence of diarrhea in children. Exclusive breastfeeding provides immunity against diarrhea in children under five years of age. Research reveals that toddlers who are exclusively breastfed are less likely to suffer from diarrheal diseases, while those who are breastfed for less than six months are more likely to develop diarrhea. Suboptimal breastfeeding increases the risk of developing diarrhea because breast milk can provide a good function of the intestinal immune system in infants. In addition, breast milk contains an antibody, immunoglobulin A (IgA), which provides protection against pathogenic bacteria (Ugboko, H. U., Nwinyi, O. C., Oranusi, S. U., & Fagbeminiyi, F. F. 2021).

CONCLUSION

Of the 88 respondents, 40 respondents (45.5%) experienced diarrhea, while 48 respondents (54.5%) did not experience diarrhea. The majority of respondents had a history of high school education (63.6%) and most were between 20-35 years old (76.1%). There is a significant relationship between respondents' knowledge and the incidence of diarrhea with $p\text{-value} = 0.01 < 0.05$ and Odds Ratio (OR)=3.095, which indicates that respondents with low knowledge are 3.095 times more likely to experience diarrhea compared to respondents who have good knowledge. There was a

significant association with the incidence of diarrhea with $p\text{-value}=0.041<0.05$ and Odds Ratio (OR)=4.175. This indicates that a poor attitude increases the risk of diarrhea by 4.175 times compared to a good attitude. There was a significant association between exclusive breastfeeding and the incidence of diarrhea, with a $p\text{-value}= 0.007 <0.05$ and Odds Ratio (OR)=7.350. Respondents who did not exclusively breastfeed their children had a 7.350 times greater risk of their children experiencing diarrhea compared to those who exclusively breastfed.

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