



Factors Associated with Diarrhea Incidence in Toddlers at Datu Beru General Hospital

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ABSTRACT

Diarrheal diseases remain a global issue with high morbidity and mortality rates in many countries, particularly in developing nations. Indonesia, as one of the developing countries, experiences a high incidence of diarrhea due to its significant morbidity and mortality rates. This study aimed to identify factors associated with the incidence of diarrhea in children under five years old at Datu Beru Regional General Hospital, Central Aceh Regency. The research was an analytical study with a cross-sectional design. The sampling method used was total sampling, involving 64 children under five. Data analysis was conducted using the Chi-Square test and Fisher's Exact test. The study was carried out from May 1 to June 3, 2024. The results revealed a significant relationship between knowledge ($P = 0.040$), access to information ($P = 0.001$), and the role of healthcare workers ($P = 0.012$) and the incidence of diarrhea in children under five. The study concluded that knowledge, access to information, and the role of healthcare workers significantly influence the incidence of diarrhea in children under five. It is recommended to enhance community education on diarrhea prevention, improve access to health information, and optimize the role of healthcare workers through promotive activities such as health education and integrated health services (Posyandu).

INTRODUCTION

Diarrheal disease is a major child health problem, especially in developing countries. According to the Centers for Disease Control and Prevention (CDC), diarrheal diseases are responsible for 1 in 9 deaths worldwide, making diarrhea the second leading cause of death in children under 5, following pneumonia. According to World Health Organization (WHO) statistics, there are 4 billion cases of diarrhea globally, contributing to 2.2 million deaths worldwide (Hanafiani et al., 2021). According to the National Socio-Economic Survey (SUSENAS), infant and under-five mortality rates in Indonesia have decreased, although not significantly compared to other ASEAN countries. Diarrheal disease remains a major health issue in Indonesia, being endemic and often linked to mortality rates (Sari & Salasabila, 2024). Indonesia has experienced an Extraordinary Event (KLB) of diarrhea in 12 provinces and 17 cities and districts, affecting up to 40% of the population (Iryanto et al., 2021).

In Indonesia, diarrhea is the leading cause of death among Toddlers, accounting for 25.2%, higher than pneumonia at 15.5%. The morbidity rate of diarrhea is around 200-400

cases per 1,000 population annually. This results in approximately 60 million cases each year in Indonesia, with the majority (70-80%) being Toddlers. A small percentage of these cases (1-2%) develop dehydration, and without treatment, 50-60% of them may die. Diarrhea accounts for 25.2% of child mortality. In 2013, the infant mortality rate in Indonesia was 34 per 1,000 live births (Sitanggang & Tampubolon, 2019).

Diarrhea affects all age groups, with the highest prevalence detected in children aged 1-4 years, at 16.7%. By gender, the prevalence is almost the same, with 8.9% in boys and 9.1% in girls. A morbidity survey conducted by the Diarrhea Subdirector of the Ministry of Health of Indonesia from 2000 to 2013 shows a rising incidence trend. The national target for the Case Fatality Rate (CFR) in diarrhea outbreaks in 2014 was 14%. In East Kalimantan, the CFR was <1%, but nationally, the target was not achieved (Indah Wasliyah et al., 2020). Diarrheal outbreaks often occur in areas with poor sanitation, inadequate clean water, and widespread malnutrition (Kartika et al., 2021). Chronic diarrhea can lead to malnutrition and growth failure in children (Wolayan et al., 2020).

The role of mothers in health issues is crucial, as mothers are the primary caregivers and decision-makers in child-rearing, including providing food, healthcare, and mental stimulation. It is expected that mothers can play a role in preventing and providing first aid for diarrhea (Herni Johan, 2024). Mothers serve as caregivers, overseeing every step of their children's movements, managing household tasks, educating their children, protecting their family, and contributing to the family income, as well as being part of the social community. In terms of health issues, a mother's role includes preventing and managing childhood diarrhea (Argarini et al., 2023). The aim of this study is to identify the factors associated with the occurrence of diarrhea in Toddlers at the Datu Beru General Hospital in Central Aceh Regency in 2024.

METHODS

This research is analytical in nature with a cross-sectional design aimed at identifying the factors associated with the occurrence of diarrhea in toddlers at Datu Beru Regional General Hospital, Central Aceh Regency. The sample size for this study is 64 respondents, and the data collection period is from May 1 to June 3, 2024. The research instrument used is a questionnaire sheet containing a set of structured questions in a multiple-choice format (Akbar, 2022). Data collection was conducted using both primary and secondary data: 1) Primary Data: Data collected directly from respondents through face-to-face interviews using a questionnaire. 2) Secondary Data: Data obtained from records and reports of the World Health Organization (WHO), the Ministry of Health of the Republic of Indonesia, and Datu Beru Regional General Hospital.

The collected data were manually processed through the following steps: Editing (data editing), Coding (coding sheet), Entry (data entry), and Tabulating (tabulation). After manual data processing, the data will be analyzed using SPSS, including univariate and bivariate analysis: 1) Univariate Analysis: Descriptive statistical techniques in the form of percentages for each sub-variable, using category levels. 2) Bivariate Analysis: Used to examine the relationship and test hypotheses between variables. The analysis used includes cross-tabulation. To test hypotheses, statistical analysis will be conducted using the Chi-Square test and Fisher's Exact test to link dependent and independent variables with a significance level of

95% ($p \leq 0.05$). The results will be presented in the form of frequency distribution tables, cross-tabulations, and narrative descriptions (Sugiyono, 2018).

RESULTS

The following is an overview of the frequency distribution of variables related to knowledge, information, healthcare worker roles, and diarrhea incidence in Toddlers.

Table 1. Analysis of Factors Associated with Diarrhea Incidence in Toddlers in the Pediatric Inpatient Ward of Datu Beru General Hospital, Central Aceh Regency

Variable		Diarrhea Incidence in Toddlers				Total		<i>p-Value</i>
		Yes		No		n	%	
		n	%	n	%			
Knowledge	Good	3	27,3	8	72,7	11	100	0,040
	Adequate	9	40,9	13	59,1	22	100	
	Poor	20	64,5	11	35,5	31	100	
Information	Yes	5	21,7	18	78,3	23	100	0,001
	No	27	65,9	14	34,1	41	100	
Healthcare Worker Role	Not Accessible	9	32,1	19	67,9	28	100	0,012
	Accessible	23	63,9	13	36,1	36	100	

Source: Primary Data, 2024

Based on the table above, it can be seen that out of 64 respondents, 11 respondents with good knowledge mostly did not experience diarrhea, with 8 respondents (72.7%), while out of 22 respondents with sufficient knowledge, the majority experienced diarrhea, with 13 respondents (59.1%). Additionally, out of 31 respondents with poor knowledge, the majority experienced diarrhea, with 20 respondents (64.5%). Based on the Chi-square statistical test at a 95% confidence level, the relationship between knowledge and the incidence of diarrhea in toddlers was analyzed, yielding a p-value of 0.040 ($P \leq 0.05$). This indicates that there is a statistically significant relationship between knowledge and the incidence of diarrhea in toddlers.

Based on the table above, it can be seen that out of 64 respondents, 23 respondents who received information mostly did not experience diarrhea, with 18 respondents (78.3%), while out of 41 respondents who did not receive information, the majority experienced diarrhea, with 27 respondents (65.9%). Based on the Chi-square statistical test at a 95% confidence level, the relationship between receiving information and the incidence of diarrhea in toddlers was analyzed, yielding a p-value of 0.001 ($P \leq 0.05$). This indicates that there is a statistically significant relationship between receiving information and the incidence of diarrhea in toddlers.

Based on the table above, it can be seen that out of 64 respondents, 28 respondents who had access to the role of healthcare workers mostly did not experience diarrhea, with 19 respondents (67.9%), while out of 36 respondents who did not have access to the role of healthcare workers, the majority experienced diarrhea, with 23 respondents (63.9%). Based

on the Chi-square statistical test at a 95% confidence level, the relationship between the role of healthcare workers and the incidence of diarrhea in toddlers was analyzed, yielding a p-value of 0.012 ($P \leq 0.05$). This indicates that there is a statistically significant relationship between the role of healthcare workers and the incidence of diarrhea in toddlers.

DISCUSSION

Knowledge is the foundation for individuals to begin any activity. It can also be defined as a collection of information that is understood and obtained through the lifelong learning process, which can be used as a tool for self-adjustment, both towards oneself and the environment (Harahap et al., 2020). Most human knowledge is acquired through sight and hearing, that is, by observing or listening to facts. In addition, knowledge is gained through experience and the learning process in both formal and non-formal education (Yuliastanti & Nurhidayati, 2021).

This information sometimes leads mothers to hesitate in practicing proper handwashing, as the sources of information may not always be reliable. As a result, mothers with previous experience at a healthcare facility, or during their child's treatment, often seek clarification on proper handwashing techniques. Problems arising from receiving partial knowledge can cause mothers to respond inadequately to the information they receive, leading to actions that may still be categorized as insufficient (Setyobudi et al., 2020).

Research findings indicate a significant relationship between parental knowledge and the incidence of diarrhea in toddlers. Data shows that the lower the knowledge level, the higher the incidence of diarrhea in toddlers. Overall, the results of this study align with theories stating that knowledge is a determinant factor in health behavior. Therefore, targeted health education must be enhanced to improve community knowledge, especially concerning the prevention of diarrhea in toddlers.

This study is not consistent with the study by Yulistya Hani et al. (2022), titled "The Relationship between Maternal Knowledge about Diarrhea and Diarrheal Incidence in Toddlers in Jebres Subdistrict, Surakarta." The results showed no statistically significant relationship between maternal knowledge about diarrhea and the incidence of diarrhea in toddlers in the area, with a p-value of 0.516 (Hani et al., 2022).

However, this study is consistent with the research by Cindy Anastasiani et al. (2023). This study revealed a significant relationship between maternal knowledge and the management of diarrhea in toddlers. Mothers with good knowledge tend to provide appropriate diarrhea management for their toddlers. The Chi-square test yielded a p-value of 0.013 (<0.05), indicating a relationship between maternal knowledge and diarrhea management in toddlers in the working area of Pahandut Health Center (Anastasiani et al., 2023).

This study is also in line with the research by Muhammad Anzar et al. (2022). The results showed a relationship between maternal knowledge and the incidence of diarrhea in toddlers, where the majority of respondents had good knowledge about diarrhea (68.0%) and a small percentage had poor knowledge (32.0%). Regarding the relationship between maternal attitudes and the incidence of diarrhea in toddlers, most respondents had a good attitude

toward diarrhea (50.0%), while a smaller portion exhibited a poor attitude (50.0%) (Muhammad Anzar et al., 2022).

Furthermore, this study is consistent with the research by Anggraeni et al. (2020). The study found a relationship between the sources of information received by mothers and the incidence of diarrhea in toddlers. Mothers who received information from reliable sources were more likely to have children who did not experience diarrhea (Anggraeni et al., 2020).

The findings of this study are consistent with the research by Suharyanta and Widiyaningsih (2023). The tests performed indicated a significant relationship between maternal knowledge and the role of MTBS officers with maternal behavior in diarrhea management, with Pearson Chi-Square values of 41.917 and 54.315, respectively, and the X^2 table value with $df=4$, $\alpha=0.1$, was 7.779. This means that X^2 calculated $> X^2$ table, indicating $p < 0.1$ (Suharyanta et al., 2023).

Finally, the findings of this study align with the research by Ratifa Julamnur et al. (2023). The univariate analysis showed that 51.43% of respondents performed good diarrhea prevention, while 48.57% performed poor prevention. 52.8% had poor knowledge, 62.86% reported no involvement of healthcare workers, 55.71% exhibited negative attitudes, and 64.29% relied on media for information. The bivariate analysis showed that knowledge had a p-value of 0.001, the role of healthcare workers had a p-value of 0.002, attitude had a p-value of 0.001, and information sources had a p-value of 0.003 (Julamnur et al., 2024).

CONCLUSION

This study concludes that there is a significant relationship between the level of knowledge, access to information, and the role of healthcare workers with the incidence of diarrhea in toddlers at the Datu Beru General Hospital, Central Aceh Regency. The analysis results show that knowledge, access to information, and the role of healthcare workers have a significant impact on the incidence of diarrhea, with each having a P-value ≤ 0.05 . Therefore, it is recommended to enhance public education on diarrhea prevention through counseling and health campaigns, improve access to health information for the community, and optimize the role of healthcare workers through promotive activities such as integrated healthcare posts (posyandu) and home visits to reduce the incidence of diarrhea in toddlers.

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