

Association between Maternal Knowledge of Personal Hygiene with the Incidence of Diarrhea in Toddlers at Palangka Raya

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ABSTRACT

Diarrhea is still one of the main causes of morbidity and death in children under five, with mothers' knowledge of personal hygiene playing an important role in children's health. This study aims to examine the relationship between the level of maternal knowledge about personal hygiene and the incidence of diarrhea in toddlers at the Imelda Workers Indonesia General Hospital, Medan. The method used was descriptive with a cross-sectional approach, involving the population of all mothers who had toddlers aged 1-5 years at the hospital. A sample of 50 respondents was taken using a purposive sampling technique, with data collection using a questionnaire and analysis using the Chi-Square test. The research results showed that almost all mothers who had good knowledge about personal hygiene did not experience diarrhea in toddlers. Statistical analysis showed a p value <0.05, indicating a significant relationship between maternal knowledge about personal hygiene and the incidence of diarrhea in toddlers. In conclusion, the better the mother's knowledge about personal hygiene, the lower the incidence of diarrhea in toddlers.

Keywords: Personal Hygiene, Mothers, Diarrhea, Toddlers

INTRODUCTION

Diarrhea is a significant cause of illness and death worldwide, particularly in low-income countries. While it can impact individuals of all ages, young children, especially toddlers, are the most susceptible. The World Health Organization (WHO) reported that by 2022, diarrhea accounted for approximately 700 million illness cases and around 525,000 deaths globally. Each year, there are nearly 1.6 billion episodes of diarrhea among children, leading to approximately 480,000 deaths in those under five years old (WHO, 2023). This condition is characterized by watery or mushy stool and increased bowel movements, typically more than three times a day. Vomiting is also common and can lead to dehydration, which can be life-threatening if not addressed swiftly.

Diarrhea frequently causes outbreaks in Indonesia, contributing to significant mortality rates in specific areas. In 2022, there were 1,950 documented cases of diarrhea across 15 provinces, leading to 42 deaths, which gives a Case Fatality Rate (CFR) of 2.15%. By 2023, the number of diarrhea cases declined to 1,450 across 10 provinces, yet the death toll remained relatively high at 38, resulting in a CFR of 2.62% (Ministry of Health, 2023).

In Kalimantan, specifically in Palangka Raya, the situation for children under five raises concerns. According to the Central Kalimantan Health Office, around 3,200 cases of diarrhea were reported in this age group in 2023, resulting in 50 fatalities. This equates to approximately 1,000 cases of diarrhea for every 100,000 children under five, with a mortality rate of about 1.56%. A significant factor contributing to the prevalence of diarrhea among young children is the mother's knowledge regarding personal hygiene and healthy living practices. This includes understanding how to provide safe food and water, the importance of handwashing with soap, proper latrine use, and the appropriate disposal of children's feces.

This research took place at the Children's Poly of Doris Sylvanus Hospital in Palangka Raya in 2024 to investigate the connection between mothers' understanding of personal hygiene and the occurrence of diarrhea in young children. The aim is to identify more effective strategies for preventing and managing diarrhea in children under five years old in this area.

METHOD

This study utilizes a descriptive approach with a cross-sectional design, allowing for the simultaneous assessment of both dependent and independent variables to uncover their relationship. The focus population includes mothers of toddlers aged 1 to 5 years at Doris Sylvanus Hospital in Palangka Raya, with a sample of 50 respondents chosen through purposive sampling. Data collection was conducted via a questionnaire, and analysis was performed using the Chi-Square test. The aim of this research is to evaluate the correlation between mothers' knowledge of personal hygiene and the incidence of diarrhea in toddlers at the Children's Poly of Doris Sylvanus Hospital in Palangka Raya in 2024.

RESULT AND DISCUSSION

The results of univariate analysis were carried out to determine the distribution of research subjects by calculating the frequency and percentage of each research variable

Table 1. Frequency Distribution of Respondents Based on Characteristics

No	General Data	Frequency	Presentation (%)
1	Age		
	25–30-year-old	12	24,0
	31–36-year-old	15	30,0
	37–42-year-old	9	18,0
	43–48-year-old	14	28,0
2	Job		
	IRT	25	50,0
	Self-employed	6	12,0
	Honorar	7	14,0
	Trader	8	16,0
	PNS	4	8,0
3	Level of Education		
	Elementary School	10	20,0
	Junior High School	16	32,0
	Senior High School	13	26,0
	Diploma	5	10,0
	Bachelor	6	12,0

Source: Primary Data, 2024.

Table 2. Frequency distribution of Respondents Knowledge Level

Knowledge level	Frequency	Presentation (%)
Good 10-15	25	50,0
Enough 5-10	16	32,0
Less <5	9	18,0

Source: Primary Data, 2024.

Table 3. Bivariate Analysis of Maternal Knowledge Level of Personal Hygiene with Incidence of Diarrhea Crosstabulation

		Diarrhea Incidence		Total
		Diarrhe a	Not Diarrhe a	
Level of Mother's Knowledge	Less = <5	15	10	25
	Enough = 5-10	9	7	16
	Good = 10-15	1	8	9
Total		25	25	50

Source: Primary Data, 2024.

Table 4. Chi-Square Tests

Diarrhea Incidence	Level of Mother's Knowledge		<i>p value</i>
Diarrhea	Enough	7	.035
Not Diarrhea	Good	10	
N of Valid Cases	50		

Level of Mother's Knowledge about Personal Hygiene

The results showed that out of 50 respondents, 25 mothers (50%) had good knowledge about personal hygiene, 16 mothers (32%) had sufficient knowledge, and nine mothers (18%) had poor knowledge. Most mothers with good knowledge showed a good understanding of personal hygiene and their children's health, which is important in preventing diarrhea in toddlers.

The education level of the mothers in this study varied: 10 mothers (20%) had primary school education, 16 mothers (32%) had junior high school education, 13 mothers (26%) had high school education, five mothers (10%) had diploma education, and six mothers (12%) had university education. This data shows that mothers with higher education tend to have better knowledge about personal hygiene. This aligns with previous research, which shows that education plays an important role in improving one's health knowledge.

The study, conducted at the Pediatric Clinic of Doris Sylvanus Hospital Palangka Raya in 2024, reinforces previous findings that education is one of the main determinants in the understanding and implementation of personal hygiene (Notoatmodjo, 2018; Setiawan, 2021). A study by Handayani (2020) also mentioned that mothers with higher education were more likely to understand and implement good hygiene practices, reducing the incidence of diarrhea in their children.

Mothers' knowledge of good personal hygiene is effective in reducing the incidence of diarrhea in children under five. In this study, mothers with good knowledge and a higher educational background showed a lower prevalence of diarrhea in their children. This study is in line with the findings by Surbakti (2019), which states that there is a significant relationship between maternal education level and the incidence of diarrhea in under-fives, where more educated mothers tend to have children with better health.

Diarrhea Incidence

The results showed that 25 of the 50 respondents reported the incidence of diarrhea in their toddlers at the Pediatric Clinic of Doris Sylvanus Hospital Palangka Raya in 2024, while the other 25 did not. Based on these findings, it can be assumed that maternal knowledge about the causes and prevention of diarrhea influences the incidence of diarrhea in toddlers.

This study indicates that mothers who have less knowledge about personal hygiene and the causes of diarrhea are more likely to have children who suffer from diarrhea. This is in line with the theory of Notoatmodjo (2018), which states that knowledge related to health problems dramatically affects health problems in certain groups. Adequate knowledge about personal hygiene and the factors that cause diarrhea can help mothers prevent diarrhea in their toddlers.

Mothers who understand the importance of personal hygiene, sanitation, the use of clean water, and the hygienic handling of food and drink can significantly reduce the risk of diarrhea in their children. For example, knowing the importance of washing hands before eating and after using the toilet can reduce exposure to pathogens that cause diarrhea.

Previous studies also support these findings. According to research conducted by Handayani (2020), mothers with higher education and good knowledge of personal hygiene tend to have children with lower incidences of diarrhea. This suggests that improving maternal knowledge through health education and counselling can be an effective strategy for reducing the incidence of diarrhea in children under five.

Relationship Between Mothers' Knowledge of Personal Hygiene and Incidence of Diarrhea in Toddlers

Based on the latest research data, it can be seen that mothers with good personal hygiene knowledge have the majority of toddlers who experience diarrhea, as many as 15 respondents. In comparison, 10 respondents do not experience diarrhea. For mothers with sufficient knowledge, nine toddlers experienced diarrhea, and seven toddlers did not experience diarrhea. The analysis results with the chi-square test showed a p-value of 0.035, which means $p < 0.05$. This indicates a significant relationship between the mother's level of knowledge about personal hygiene and the incidence of diarrhea in toddlers.

This finding aligns with previous research, which also found a relationship between maternal knowledge about personal hygiene and the incidence of diarrhea in toddlers. Research by Rizki Emil Linda (2017) shows that mothers with low knowledge of personal hygiene have children with a higher risk of diarrhea. This is also supported by the study of Vitriawati (2019), which found a significant relationship between the level of maternal knowledge about personal hygiene and the incidence of diarrhea in toddlers.

Mothers' lack of knowledge about personal hygiene may reduce their ability to implement good hygiene practices in their daily lives. Poor hygiene practices, such as not washing hands before eating or after using the toilet, can increase the risk of exposure to pathogens that cause diarrhea. Therefore, improving maternal knowledge through health education and counseling can be a practical step in preventing diarrhea in children under five.

CONCLUSION

The research found that the majority (50.0%) of respondents in the Pediatric Poly of Doris Sylvanus Hospital Palangka Raya in 2024 had good knowledge about personal hygiene. Most mothers with good personal hygiene knowledge had toddlers who did not experience diarrhea (10 respondents). Conversely, mothers with less personal hygiene knowledge have more toddlers who experience diarrhea. The study's results obtained a p-value of 0.035, meaning there is a significant relationship between maternal knowledge about personal hygiene and the incidence of diarrhea in toddlers in the Pediatric Poly of Doris Sylvanus Hospital Palangka Raya in 2024. So, the better the mother's knowledge about personal hygiene, the lower the incidence of diarrhea in toddlers.

To enhance mothers' knowledge about hygiene, the study suggests strengthening educational initiatives through focused counseling by healthcare professionals, incorporating engaging resources like brochures and videos. Follow-up research should be conducted to evaluate changes in maternal knowledge and its effect on toddler health. Additionally, community campaigns on the importance of hygiene could further improve awareness and practices.

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