

KNOWLEDGE, ATTITUDE, AND BEHAVIOR OF MOTHERS' HANDS WASHING WITH SOAP WITH DIARRHEA AMONG CHILDREN UNDER FIVE

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Abstract

Diarrhea is a prevalent health issue among infants, particularly between the ages of 6 months and 2 years, as well as in children under five. Various factors contribute to the occurrence of diarrhea in infants, one of which is the mother's handwashing behavior. This behavior can be influenced by several factors, including knowledge and attitudes. This study aims to explore the relationship between mothers' knowledge, attitudes, and handwashing behaviors with soap, and the incidence of diarrhea in infants in Dusun Kanoman and Dusun Dukuh, Banyuraden Village, Gamping Subdistrict, Sleman District, Yogyakarta Province, Indonesia. This cross-sectional study involved a population of mothers with children aged 0-24 months, with a total sample size of 72 respondents, selected through total sampling. The research instruments included questionnaires assessing knowledge, attitudes, behaviors, and the occurrence of diarrhea. Data were analyzed using the Chi-square test. The results indicated no significant relationship between the level of knowledge of handwashing with soap and the occurrence of diarrhea (p-value = 0.218). Similarly, there was no significant relationship between mothers' attitudes towards handwashing with soap and the incidence of diarrhea (p-value = 0.821), nor between handwashing behavior and the occurrence of diarrhea (p-value = 0.644). The study concludes that there is no correlation between mothers' knowledge, attitudes, and handwashing behaviors with soap and the incidence of diarrhea in infants within the study population.

Keywords: Diarrhea, Children Under Five, Washing Hand, Mother's Behavior

Introduction

Diarrhea is one of the most common health issues affecting infants and young children, particularly those aged between 6 months and 2 years (1). This period is particularly vulnerable as it marks the transition from exclusive breastfeeding to the introduction of complementary foods, which can often lead to digestive disturbances if not managed properly (2). In Indonesia, diarrhea remains a leading cause of morbidity and mortality among children under five, highlighting the critical importance of addressing factors that contribute to its occurrence in this age group (3).

One significant factor contributing to the incidence of diarrhea in infants is maternal handwashing behavior (4). Handwashing with soap is a simple yet highly effective preventive measure to reduce the spread of infections, including diarrhea (5). However, this practice is often neglected or inconsistently performed, particularly in communities with low levels of health knowledge and awareness (6). A lack of knowledge and unsupportive attitudes towards the importance of handwashing can directly impact a mother's daily handwashing behavior (7).

Several studies have demonstrated a strong relationship between a mother's knowledge and attitudes towards personal hygiene, specifically handwashing practices, and the occurrence of diarrhea in their children(8,9). Adequate knowledge about the importance of handwashing can encourage mothers to practice it more consistently and correctly (10). However, other factors such as access to sanitation facilities, family habits, and local cultural practices also play a crucial role in determining the extent to which this knowledge is applied in daily life (11,12).

Based on a preliminary study in the village of Banyuraden, researchers interviewed six young mothers who had had diarrhea, four of them had good knowledge of hand washing with soap, but the attitude and behavior of mothers towards it was still bad, that is, there were mothers that washed their hands only with running water, used soap sometimes and did not dry their hands with one-time fabrics. Besides, young mothers rarely wash their hands before preparing food. The purpose of this research is to find out the relationship between the level of knowledge, attitude and behavior of washing hands with mother soap with the occurrence of diarrhea on news in Dusun Kanoman and Dusun Dukuh, Banyuraden village, Gamping district, Sleman district.

Method

The type of research used is quantitative analytics with cross sectional approaches. The population of this study is a mother who has a baby aged 0-24 months in Dusun Kanoman and Dusun Dukuh, Banyuraden Village. As for sampling using total samplings with a total sample of 72 respondents. The research data was collected using a questionnaire of knowledge, attitude, behavior and occurrences of diarrhea. The questionnaire consists of 9 statements, attitudes 10 statements and behaviors 10 questions. Previously, the questionnaires tested the validity and reliability of 31 respondents in Dusun Mejing Lor, Gamping who have similar characteristics to the location of the study. The result is that the alpha value of the mother's level of knowledge is 0.784 then the attitude of the α value is 0.711 and the behavior of the mom with the value of α is 0.821. The alfa value is greater than 0.60 means that the questionnaire of the knowledge level, attitude and behaviour of mother to the occurrence of diarrhoea in the child is said to be reliable. The variable category of knowledge, attitude and behavior uses the cut of point median, whereas the occurrence of diarrhea is characterized by liquid/even water-like urination, and urination more than three times a day in the last 3 months. The data was then analyzed using the Chi-Square test.

Results

Characteristics of mothers of toddlers in Kanoman Hamlet and Dukuh Hamlet, Banyuraden Village, Gamping District, Sleman Regency in 2021 based on age, education level, and occupation. The results of the frequency distribution of characteristics of mothers of toddlers based on age, education level and occupation in Kanoman Hamlet and Dukuh Hamlet, Banyuraden Village, Gamping District can be seen in Table 1. Based on table 1, the results obtained from 72 respondents, the majority were aged 26-35 years (39 respondents) (54.2%), with the majority having a high school education (39 respondents) and the majority having jobs as housewives (50 respondents) (69.4%).

Table 1. Characteristics of Mothers of Toddlers Based on Age, Education and Occupation

Characteristics	Frequency	%
Age		
17-25	10	13.9
26-35	39	54.2
36-45	21	29.2
46-55	2	2.8
56-65	0	0
Education level		
Elementary	1	1.4
Secondary	9	12.5
Senior high	39	54.2
Diploma	3	4.2
Bachelor	17	23.6
Mater and above	3	4.2
Occupational		
Housewife	50	69.4
Privat sectors	9	12.5
Teacher	10	13.9
Lecturer in university	3	4.2

Univariate analysis is to describe each variable studied by calculating the distribution and frequency. The variables in the study include the level of knowledge about Handwashing with Soap, attitudes, behavior and incidence of diarrhea in toddlers. The results of univariate analysis on the variables of level of knowledge, attitudes, behavior and incidence of diarrhea in toddlers can be seen in Table 2. Based on table 2, it shows that out of 72 respondents, in the variable level of knowledge about washing hands with soap, 54 respondents (75.0%) were in the good category, 42 respondents (58.3%) had good attitudes, 43 respondents (59.7%) had good behavior, and in the variable of diarrhea incidence in toddlers, the majority did not experience diarrhea, 53 (73.6%).

Table 2. Level of knowledge about washing hands with soap, attitudes and behavior

Variables	Frequency	%
Level of knowledge		
Poor	18	25.0
Good	54	75.0
Attitude		
Poor	30	41.7
Good	42	58.3
Behavior		
Poor	29	40.3
Good	43	59.7
Occurance of diarrhea		
No	53	73.6
Yes	19	26.4

Bivariate analysis was used to determine the relationship between the level of knowledge, attitude and behavior of mothers' Handwashing with Soap with the incidence of diarrhea in toddlers using cross tabulation. The statistical test used was Chi-square, it is said that there is a relationship if the statistical test shows $\alpha < 0.05$. The results of the bivariate analysis of the relationship between the level of knowledge, attitude and behavior of mothers with the incidence of diarrhea in toddlers can be seen in Table 3. Based on table 3, the results of the chi-square test on the variable level of knowledge of mothers' Handwashing with Soap with the incidence of diarrhea in toddlers obtained a p-value of 0.280, which means there is no relationship between the level of knowledge of mothers with the incidence of diarrhea

in toddlers. There is no relationship between mothers' attitudes with the incidence of diarrhea in toddlers with a p-value of 0.821. Mothers' Handwashing with Soap behavior with the incidence of diarrhea in toddlers obtained a p-value of 0.644, which means there is no relationship between mothers' behavior with the incidence of diarrhea in toddlers. This is because the p-value is greater than 0.05, so H_0 is accepted and statistically insignificant.

Variable	Occurance of diarrhea				Total		P-Value
	Yes		No		n	%	
	n	%	n	%			
Level of knowledge							
Poor	12	14.3	42	39.8	54	75.0	0.280
Good	7	4.8	11	13.3	18	25.0	
Attitude							
Poor	12	11.1	30	30.9	42	58.7	0.821
Good	7	7.9	23	22.1	30	41.7	
Behavior							
Poor	10	11.3	33	31.7	43	59.8	0.644
Good	9	7.7	20	21.3	29	40.2	

Discussion

The findings of this study indicate that there is no significant relationship between mothers' knowledge, attitudes, and handwashing behaviors and the incidence of diarrhea among infants in Dusun Kanoman and Dusun Dukuh, Banyuraden Village. This result contrasts with previous studies that have identified maternal handwashing behavior as a critical factor in preventing diarrhea in young children. The lack of significant correlation suggests that while handwashing is an essential preventive measure, other factors may be more influential in this specific context (13). It is possible that environmental factors, such as water quality, sanitation infrastructure, and overall community hygiene practices, play a more substantial role in determining the risk of diarrhea in these areas (14–16).

One possible explanation for the absence of a significant relationship could be the homogeneity of the study population (17). If most mothers in the study exhibit similar levels of knowledge, attitudes, and behaviors regarding handwashing, the variability necessary to detect a significant association may be insufficient (18). Additionally, the study's focus on a relatively small, rural population may limit the generalizability of the findings to other settings with more diverse populations and varying levels of access to health resources (19). This limitation highlights the need for future research to include a broader and more diverse sample to better understand the complex interplay of factors influencing diarrhea incidence.

Another factor to consider is the potential influence of cultural practices and local beliefs on health behaviors. In many communities, traditional beliefs and practices regarding child care and hygiene may override formal health education, leading to inconsistent adoption of recommended behaviors such as handwashing with soap (13). Moreover, the presence of social norms and peer influences within the community might affect whether and how mothers engage in proper hygiene practices (20). Therefore, future studies should explore the role of cultural and social determinants in shaping health behaviors and their impact on child health outcomes.

Finally, the findings of this study underscore the importance of a holistic approach to diarrhea prevention that goes beyond individual behaviors. Interventions should consider the broader environmental, social, and cultural context in which these behaviors occur. Improving access to clean water, sanitation facilities, and comprehensive health education that addresses local beliefs and practices may be necessary to reduce the burden of diarrhea in rural communities effectively (21,22).

Additionally, integrating community engagement and participatory approaches in health promotion programs could enhance the relevance and effectiveness of interventions, leading to more sustainable health outcomes.

Conclusion

The study reveals that there is no significant relationship between mothers' levels of knowledge, attitudes, and handwashing behaviors with the incidence of diarrhea in infants in Dusun Kanoman and Dusun Dukuh, Banyuraden Village, Gamping Subdistrict, Sleman District. Although handwashing with soap is recognized as an effective preventive measure against infections like diarrhea, the findings suggest that other factors may play a more dominant role in influencing the occurrence of diarrhea in this population. The absence of a significant correlation indicates the need for further exploration of other factors such as environmental conditions, access to sanitation facilities, and other hygiene practices in diarrhea prevention efforts. This study underscores the importance of a more comprehensive and contextual approach in designing effective health interventions to reduce diarrhea rates among infants and young children in rural areas. Future research should expand the scope and investigate other contextual factors that may contribute to diarrhea incidence in this region, as well as assess the effectiveness of health education programs aimed at improving handwashing knowledge and behaviors among mothers.

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