



The Relationship Between Hand Washing Habits, Clean Water Facilities and Public Perception With the Incidence of Diarrhea in the Working Area of the Anjir Pasar Public Health Center, Barito Kuala Regency

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Abstract

Diarrhea remains a serious public health problem in Indonesia, particularly in areas with inadequate environmental sanitation and low levels of hygiene. According to WHO data, approximately 2 billion cases of diarrhea are recorded worldwide each year, with more than 1.9 million deaths, most of which occur in children under five in developing countries. In Indonesia, specifically in South Kalimantan Province, the prevalence of diarrhea cases is 19.3%, higher than the national average. Barito Kuala Regency recorded a case percentage of 17.8%, with the Anjir Pasar Community Health Center (Puskesmas) serving as the work area contributing 162 cases in 2024 and 40 cases until March 2025. This study aims to analyze the relationship between handwashing habits, clean water facilities, and public perceptions of diarrhea. The research method used a quantitative approach with a cross-sectional design. The population in this study was 3,200 people visiting the Anjir Pasar Community Health Center. A sample of 98 respondents was determined using an accidental sampling technique. Data analysis was performed using the chi-square test with a significance level of $\alpha \leq 0.05$. The results showed a relationship between handwashing habits (p-value = 0.009), clean water facilities (p-value = 0.022), and public perception (p-value = 0.000) with the incidence of diarrhea. It is recommended that community health centers strengthen PHBS education programs and increase access to adequate clean water facilities to prevent diarrhea more effectively.

Keywords: Diarrhea; Handwashing Habits; Clean Water Facilities; Public Perception

INTRODUCTION

Diarrhea is a digestive system disorder characterized by an increased frequency of bowel movements, typically three or more times a day, accompanied by the passage of stools with a high water content. This condition causes the body to lose significant amounts of fluid, which can lead to dehydration and even lead to death. (Jones & Rubin, 2009).

According to a World Health Organization report, approximately two billion cases of diarrhea are recorded worldwide each year, with the death toll reaching 1.9 million in children under five years of age due to the disease. The majority of these cases, approximately 78%, occur in Africa and Southeast Asia. Meanwhile, the results of the 2018 Basic Health Research (RISK Kesehatan Dasar) showed that the incidence of diarrhea in Indonesia reached 8% across all age groups, with a prevalence of 12.3% in toddlers and 10.6% in infants. (WHO, 2019).

Environmental sanitation plays a crucial role in preventing diarrheal disease, particularly through ensuring access to clean water and promoting the habit of handwashing with soap. Handwashing is a part of Clean and Healthy Living Behaviors (PHBS), which should ideally be part of people's daily routines. (Wahyuti et al., 2025) However, public awareness of this habit remains low due to unsupportive environmental conditions, such as limited clean water and inadequate sanitation facilities. Furthermore, public perceptions about the causes and prevention of diarrhea also influence their health behavior. (Fahlevi, 2017).

Basic Health Research Results Data from 2018 showed that nationally, the incidence of diarrhea diagnosed by health workers reached 6.8%. Meanwhile, South Kalimantan province recorded a much higher prevalence, at 19.3%. This condition indicates the persistence of serious problems related to environmental factors and community behavior. (Pambudi, 2022).

According to a 2024 report from the Barito Kuala Health Office, the incidence of diarrhea in Barito



Kuala Regency reached 17.8%. This percentage makes this region the region with the highest diarrhea prevalence in South Kalimantan. One area contributing to this high figure is the Anjir Pasar Community Health Center (Puskesmas) working area, which ranked fifth in the number of diarrhea cases throughout 2024 and recorded 40 additional cases between January and March 2025. With a population of around 10,000, the prevalence of diarrhea in the Anjir Pasar Community Health Center working area reached 1.62% in 2024 and 0.4% in early 2025. This data reflects that various risk factors remain unaddressed, both in terms of community behavior and environmental conditions.(Anjir Pasar Community Health Center, 2024).

METHOD

This study was designed using quantitative methods with a cross-sectional analytical observational design. This type of research aims to analyze the relationship between risk factors or independent variables and the consequences or outcomes they cause on the dependent variable simultaneously. The research population included all 3,200 patients visiting the Anjir Pasar Community Health Center. From this population, a sample representing groups with certain characteristics was selected and served as research respondents. The sample size was determined using the Slovin formula with a 10% error rate, resulting in a total of 98 respondents. The sampling technique implemented was accidental sampling.

A questionnaire served as the data collection instrument for this report, along with interviews and direct field observations. After the data were collected, they were analyzed in two stages, including univariate and bivariate analysis. The frequency distribution of each variable was displayed using univariate analysis, while the relationship between the independent and dependent variables was identified using bivariate analysis and the Chi-Square test, with a 95% confidence level.

RESULTS AND DISCUSSION

RESULTS

Respondent Characteristics

Table 1. Frequency distribution of respondents in the work area of the Anjir Pasar Health Center, Barito Kuala Regency

Respondent Characteristics	f	%
Age		
17 – 19 Years	8	8.2
20 – 29 Years	33	33.7
30 – 59 Years	53	54.1
> 60 Years	4	4.1
Gender		
Woman	45	45.9
Man	53	54.1
Last education		
Elementary School	26	26.5
JUNIOR HIGH SCHOOL	15	15.3
High School/Vocational School	45	45.9
College	12	12.2
Work		
Farmer	29	29.6
Entrepreneur	47	48.0
Private employees	6	6.1
civil servant	4	4.1
Doesn't work	12	12.2
Total	98	100

Referring to table 1, it was found that the distribution of the frequency of the research sample was mostly aged 30-59 years, namely 53 people (54.1%), male gender 53 people (54.1%), last education was high school/vocational school 45 people (45.9%), self-employed 47 people (48.0%).

Univariate Analysis

Table 2. Frequency distribution of univariate analysis in the work area of the Anjir Pasar Health Center, Barito Kuala Regency



Variables	Category	Frequency	%
Diarrhea Incident	Diarrhea	68	69.4
	No Diarrhea	30	30.6
Hand Washing Habits	Not enough	31	31.6
	Enough	53	54.1
	Good	14	14.3
Clean Water Facilities	Available	20	20.4
	Not available	78	79.6
Public Perception	Not enough	17	17.3
	Enough	18	18.4
	Good	47	48.0
	Very good	16	16.3
Amount		98	100

Based on table 2, it was found that 68 respondents (69.4%) experienced diarrhea, 53 people (54.1%) had sufficient handwashing habits, 78 people (79.6%) had no clean water facilities, and 47 people (48.0%) had good public perception.

Bivariate Analysis

Table 3. Relationship between hand washing habits, clean water facilities and community perceptions with the incidence of diarrhea in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

Variables	Diarrhea Incident				Total		<i>p-value</i>
	No Diarrhea		Diarrhea		n	%	<i>p-value</i>
	n	%	n	%			
Hand washing habits							
Not enough	3	9.7	28	90.3	31	100	0.009
Enough	21	39.6	32	60.4	53	100	
Good	6	42.9	8	57.1	14	100	
Clean water facilities							
Available	10	50.0	10	50.0	20	100	0.035
Not available	20	25.6	58	74.4	78	100	
Public perception							
Not enough	5	29.4	12	70.6	17	100	0.000
Enough	3	16.7	15	83.3	18	100	
Good	9	19.1	38	80.9	47	100	
Very good	13	81.3	3	18.8	16	100	

Based on Table 3, it is known that respondents with poor handwashing habits had the highest incidence of diarrhea, namely 90.3% of 31 people. In the sufficient category, the incidence of diarrhea was recorded at 60.4% of 53 respondents, while in the good category it was 57.1% of 14 respondents. The results of the analysis using the Chi-Square test showed a p value = 0.009 (<0.05), so H_0 was rejected. This means that there is a significant relationship between handwashing habits and the incidence of diarrhea in the community in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

OnThe variable of clean water facilities, as many as 10 respondents (50.0%) who had access to clean water experienced diarrhea, while in the group who did not have clean water facilities the number was higher, namely 50 people (74.4%). The results of the Chi-Square test showed a p value = 0.035 (<0.05), so H_0 was rejected. Thus, there is a relationship between the availability of clean water facilities and the incidence of diarrhea in the work area of the Anjir Pasar Health Center, Barito Kuala Regency.

Respondents with poor community perception mostly experienced diarrhea as many as 12 people (70.6%), while in the sufficient perception category as many as 15 people (83.3%), and the good perception category as many as 38 people. Meanwhile, respondents with very good perception mostly did not experience diarrhea, namely 13 people (81.3%). The results of the Chi-Square statistical test showed a p value = 0.000 (<0.05), so H_0 was rejected. This indicates a significant



relationship between community perception and the incidence of diarrhea in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

DISCUSSION

Univariate Analysis

Diarrhea incidents in the work area of the Anjir Pasar Health Center, Barito Kuala Regency

Based on Table 2, 69.4% of the 98 respondents experienced diarrhea. The results showed that respondents with poor handwashing habits and limited access to clean water experienced diarrhea more frequently. Lack of handwashing with soap and the use of contaminated river water or drilled/dug wells increased the risk of digestive infections. Respondents with low perceptions also tended to be less concerned about clean and healthy living behaviors. Environmental conditions, type of employment, education level, and role in the household also influenced the health behaviors of the surrounding community.

Hand washing habits in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency

Based on Table 2, the distribution of responses to the questionnaire asked of the public shows that many respondents still have a habit of washing their hands in the sufficient category, namely (54.1%). The habit of washing hands with soap before and after carrying out important activities, such as eating, going to the bathroom, or after contact with animals or dirty objects, is highly correlated with a decrease in the incidence of infectious diseases in the community. (Handayani et al., 2021).

Clean water facilities in the working area of the Anjir Pasar Health Center, Barito Kuala Regency

Based on Table 2, the results of questionnaire responses answered by the Anjir Pasar community indicate that many still use drilled/dug wells (79.6%). Access to clean water plays a crucial role in supporting the adoption of clean and healthy living behaviors. Without sufficient clean water availability, communities will experience difficulties in the potential spread of infectious diseases. The research also shows that areas with limited clean water have a higher incidence of diarrhea than areas with good access to clean water. (Hendrawan, 2022).

Public perception in the work area of the Anjir Pasar Health Center, Barito Kuala Regency

Based on Table 2, the results of the questionnaire responses answered by the Anjir Pasar community showed that public perception was in the good category (48.0%). Public perception plays a crucial role because most still consider diarrhea to be a minor disorder that does not require special prevention. According to WHO data, most cases of diarrhea can be avoided through simple habits such as washing hands with soap and clean water. Therefore, building a positive perception and a strong understanding of the importance of hand hygiene is a strategic step in preventing the transmission of disease, particularly diarrhea. (WHO, 2018).

Bivariate Analysis

The Relationship Between Handwashing Habits and Diarrhea Incidence in the Work Area of the Anjir Pasar Community Health Center, Barito Kuala Regency

Based on Table 3, it is known that the majority of questionnaire respondents with poor handwashing habits experienced diarrhea, as many as 28 people (90.3%). Meanwhile, respondents with adequate handwashing habits experienced diarrhea, as many as 32 people (60.4%), and in the group with good habits, 8 people (57.1%) experienced diarrhea. The results of the statistical test using Chi-Square showed a p value = 0.009 (<0.05), so H_0 was rejected. Thus, there is a significant relationship between handwashing habits and the incidence of diarrhea in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

The findings of this study indicate that irregular and incorrect handwashing practices are major factors contributing to the increasing incidence of diarrhea in the region. Data show that respondents with poor handwashing habits had the highest incidence of diarrhea, at 90.3%. Low awareness and limited knowledge about the importance of washing hands with soap, especially



before eating and after defecating, are suspected to be the cause of the high exposure to diarrhea-causing bacteria among the community.

The Relationship between Clean Water Facilities and Diarrhea Incidence in the Work Area of the Anjir Pasar Community Health Center, Barito Kuala Regency

Based on Table 3, it is known that 10 respondents (50.0%) who had clean water facilities experienced diarrhea. Meanwhile, among respondents

Those without clean water facilities had a higher number of diarrhea cases, namely 58 people (74.4%). The results of statistical analysis using the Chi-Square test showed a p-value of $0.035 < 0.05$, so H_0 was rejected. Thus, it can be concluded that there is a relationship between clean water facilities and diarrhea cases in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

Researchers believe that the type and quality of clean water facilities significantly influence the likelihood of diarrhea in a community. Using river water that is easily contaminated and unsuitable for daily needs has the potential to become a source of diarrheal disease transmission. On the other hand, communities that still rely on drilled or dug wells are likely to receive water with lower hygiene quality than PDAM water, which is more securely managed. Therefore, researchers suspect that limited access to clean water facilities that meet standards, particularly PDAM water, plays a role in the increasing incidence of diarrhea in the region.

The Relationship between Public Perception and Diarrhea Incidence in the Work Area of the Anjir Pasar Community Health Center, Barito Kuala Regency

Based on Table 3, it can be seen that respondents with poor community perception mostly experienced diarrhea, as many as 12 people (70.6%). Meanwhile, in the group with sufficient perception, the number of diarrhea sufferers reached 15 people (83.3%), and in the group with good perception there were 38 people (80.9%) who experienced diarrhea. Conversely, respondents with very good perception mostly did not experience diarrhea, namely 13 people (81.3%). The results of statistical analysis using the Chi-Square test showed a p value = $0.000 < 0.05$, so H_0 was rejected. Therefore, it can be concluded that there is a significant relationship between community perception and the incidence of diarrhea in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency.

Research shows that respondents with poor, adequate, and even good perceptions still experience diarrhea. This is likely due to differences in knowledge and the application of healthy behaviors in daily life. Although people understand the importance of handwashing, using clean water, and maintaining food hygiene, these habits are not consistently practiced. Furthermore, environmental factors such as the use of unsafe water (such as cloudy well water or river water), poor sanitation, and unhygienic food storage habits also increase the risk of diarrhea. Other factors, such as a weakened immune system or the presence of underlying diseases, can also trigger diarrhea even if individuals have a good perception.

CONCLUSION

The majority of the population in the study area was recorded as having diarrhea, namely 69.4% of the total 98 participants. The majority of the community had a handwashing habit in the sufficient category, namely, 54.1% of 98 people. In addition, 79.6% of respondents did not have access to clean water facilities, while 48.0% of the community had a relatively good perception. The results of the analysis showed that there was a relationship between handwashing habits and the incidence of diarrhea in the work area of the Anjir Pasar Community Health Center, Barito Kuala Regency with a p-value = 0.009. A relationship was also found between the availability of clean water facilities and the incidence of diarrhea with a p-value = 0.035, as well as a relationship between community perception and the incidence of diarrhea with a p-value = 0.000 in the area.

SUGGESTION



It is hoped that the community will be more aware and routinely implement Clean and Healthy Living Behavior (PHBS), such as washing hands with soap, using clean water and maintaining home cleanliness to further avoid diarrheal diseases. The Anjir Pasar Community Health Center in Barito Kuala Regency is advised to increase access to clean water, strengthen education about PHBS and add medical personnel to optimize health services. The results of this study will be used as a reference for further research by adding other variables such as water treatment, handwashing frequency, diet and environmental cleanliness and by using different research methods.

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