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Analysis Of Clean Water Availability On Household Environmental Health

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ABSTRACT

Clean water is crucial component in maintaining a healthy household Adequate environment availability of clean water can support good hygiene and sanitation practices and prevent various environmental diseases. This study aims to analyze the relationship between clean water availability and household environmental health. The study used an analytical design with a cross-sectional approach. The study sample consisted of 80 households selected using a purposive sampling technique. Data were collected through observation and interviews using a structured questionnaire. Data analysis used the chi-square test. The results showed that households with good clean water availability had better environmental health conditions than households with inadequate clean water availability. The statistics test results showed a p- value of 0.018 ($p < 0.05$). It was concluded that there is a significant relationship between clean water availability and household environmental health.

Keywords: Clean Water, Environmental Health, Sanitation, Household

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1. Introduction

Clean water is a basic human need that is crucial for daily life. Water is used for various household activities such as cooking, drinking, washing, bathing, and maintaining environmental cleanliness.

The availability of adequate clean water plays a crucial role in preventing various environmental diseases such as diarrhea, skin diseases, and gastrointestinal infections. The World Health Organization (WHO) states that access to clean water and good sanitation can significantly reduce the incidence of infectious diseases.

However, in some areas, access to clean water remains a serious problem. Limited clean water sources can lead people to use water that does not meet health standards, increasing the risk of disease.

Furthermore, the availability of clean water also influences people's hygiene practices. Households with adequate access to clean water tend to have better hygiene practices than those with limited water.

This study aims to analyze the relationship between the availability of clean water and household environmental health.

2. Research Methods

a. Research Design

This study uses an analytical design with a cross-sectional approach.

b. Population and Sample

The research population was all households in the working area of Health Center X.

The research sample consisted of 80 households selected using purposive sampling technique.

c. Inclusion Criteria

1) Households residing in the research area
2) Willing to be a respondent
3) Have a water source for daily needs

d. Research Variables

- Independent variable: availability of clean water
- Dependent variable: household environmental health

e. Data collection

Data obtained through:

- Observation of home environmental conditions
- Interviews using questionnaires

f. Data analysis

The analysis was performed using:

- Descriptive analysis

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- Chi-square test with a significance level of 0.05

3. Research Results And Discussion

a. Research Result

1) Respondent Household Characteristics

This study involved 80 households as respondents. Household characteristics included the number of family members, water source used, and the education level of the head of the household.

Table 1.
Respondent Characteristics

Characteristics	n	%
Number of family members		
≤4 people	46	57.5
>4 people	34	42.5
Main water source		
Well	38	47.5
PDAM	28	35
River	14	17.5
Education of head of family		
Base	30	37.5
Intermediate	36	45
Tall	14	17.5

Most households use well water as their primary water source. This situation indicates that people still rely heavily on groundwater to meet their daily needs.

2) Level of Clean Water Availability

The availability of clean water is assessed based on several indicators such as water sources, continuity of water availability, and the physical condition of the water.

Table 2.
Distribution of Clean Water Availability

Availability of Clean Water	n	%
Good	48	60
Not enough	32	40

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As many as 60% of households have good clean water availability, while 40% of households still experience limited access to clean water.

The limited availability of clean water is generally caused by the distance of water sources, poor water quality, and limited clean water infrastructure.

3) Household Environmental Health Conditions

Household environmental health is assessed based on several indicators, including:

- Cleanliness of the home environment
- Household waste management
- Availability of sanitation facilities
- Family hygiene practices

Table 3.
Household Environmental Health Conditions

Environmental Conditions	n	%
Healthy	44	55
Unwell	36	45

The research results show that more than half of households have environmental conditions that are classified as healthy.

4) The Relationship between Clean Water Availability and Environmental Health

Table 4.
Relationship Analysis

Availability of Clean Water	Healthy Environment	Unhealthy Environment	Total
Good	32	16	48
Not enough	12	20	32
Total	44	36	80

The results of the analysis using the chi-square test show the values: $p = 0.018$.

Because $p < 0.05$, it can be concluded that there is a significant relationship between the availability of clean water and household environmental health.

5) Unhealthy Environmental Risk Analysis

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Table 5.
Risks of Unhealthy Environmental Conditions

Availability of Clean Water	Unhealthy Environmental Risks
Good	33.3%
Not enough	62.5%

Households with inadequate access to clean water are almost twice as likely to experience unhealthy environmental conditions as households with good access to clean water.

b. Discussion

Research results show that clean water availability is significantly related to household environmental health. Households with adequate access to clean water tend to have healthier environments than those with limited access.

Clean water is a crucial component in maintaining a clean household environment. Adequate water availability allows people to engage in various hygiene practices such as washing hands, cleaning household equipment, and maintaining a clean living environment.

This causes people to reduce hygiene practices due to limited water sources. This condition can increase the risk of environmental diseases such as diarrhea, skin diseases, and gastrointestinal infections.

The quality of water used also significantly impacts public health. Water contaminated with pathogenic microorganisms can transmit disease if used for consumption or household activities.

In the context of environmental health, the availability of clean water is also related to clean and healthy living behaviors (PHBS). Households with access to clean water are more likely to adopt good hygiene practices, such as washing hands before eating and after using the toilet.

Household environmental health is not solely influenced by the availability of clean water. Several other factors also play a role, including:

- Community education level
- Environmental sanitation conditions
- Family hygiene behavior
- Household waste management

Efforts to improve environmental health need to be carried out comprehensively through the provision of clean water facilities, improving sanitation facilities, and educating the public about clean and healthy living behaviors.

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➢ **Public Health Implications**

The results of this study indicate that increasing access to clean water is a crucial step in improving household environmental health. Providing adequate clean water infrastructure can help communities maintain environmental cleanliness and prevent various environmental-related diseases.

Public health programs also need to integrate the provision of clean water with sanitation programs and education on clean and healthy living behaviors.

4. Conclusion And Suggestions

a. Conclusion

There is a significant relationship between clean water availability and household environmental health. Households with adequate access to clean water tend to have healthier environments.

b. Suggestion

1) The government needs to increase public access to safe, clean water sources.
2) Educational programs regarding clean and healthy living behavior need to be improved.
3) Further research could examine other factors that influence household environmental health.

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