The Correlation Between Demographic Characteristics With Wash Practices In Stunting Locus

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Abstract

Human factors are very complex in the spread of disease. Stunting is caused by chronic malnutrition and infections in toddlers. Lack of access to clean water, hygiene, and sanitation contributes to stunting. Demographic factors can affect a person's motivation to maintain hygiene. This study aims to be determined the correlation between demographic characteristics and water, sanitation, and hygiene (WASH) practices at the stunting locus. The method in this study used a correlational quantitative method with a cross-sectional design to be measured demographic characteristic and WASH practices variables. The study population consisted of Sukamulya village residents, and 463 Sukamulya village residents were sampled using total sampling. SPSS Version 26 for Windows was used for univariate and bivariate Chi-Square analysis. The results showed that 228 (49.2%) out of 463 of respondents had poor WASH practices. The results of the correlation test showed that there was a correlation between level of education and WASH practices with a score of Chi-Square 17,564 (p-value = 0,002). There is a correlation between education level and WASH practices at the stunting locus. Education affects a person's perspective and decision-making, including environmental hygiene and health. Thus, the government and policymakers should hold WASH programs to educate the public about keeping the stunting locus clean.

Keywords: Demographic Characteristics; WASH Practices; Water, Sanitation, and Hygiene.

Introduction

Inappropriate behavior and poor sanitation are still major problems for Indonesian. In 2020, more than 1.7 billion people have lack access of basic sanitation facilities, such as private toilets or latrines, and 45% of household wastewater generated globally will be disposed of without safe treatment (UNICEF, 2021). It is estimated that at least 10% of the global population consumes food irrigated with wastewater. In Indonesia, nearly 25 million people do not use toilets and instead defecate in fields, bushes, forests, ditches, roads, canals, and other open areas (UNICEF Indonesia, 2022). Despite significant progress in basic drinking water coverage in Indonesia, access to safe drinking water remains limited, owing primarily to faecal contamination. As many as three billion people do not have access to handwashing facilities with soap. In 2018, Badan Pusat Statistik (BPS) data shows that the percentage of the population that regularly washes their hands in all districts and cities in Indonesia is still below 50% (WHO, 2022). According to the BPS Community Behavior Survey conducted in July 2021, during a pandemic, the percentage of the population who habitually wash their hands with soap increased to 75%.

Public health problems in Indonesia are still characterized by high morbidity and mortality rates from environmental-based diseases. The low cleanliness consciousness of the Indonesian population has a significant effect on their health. Limited access to clean water for household needs, a lack of availability of healthy family latrines, and improper disposal of waste water and garbage can increase the possibility of infection in the occupants of the house due to exposure to pathogen contamination (Anas et al., 2022). The lack of healthy family latrines can be the main cause of infection in toddlers. Unsanitary latrines also cause contamination of groundwater (wells) and surface water (rivers), which allows the transmission of infectious diseases. The unavailability of sewerage channels causes household wastewater to be discharged into yards or rivers. Poor-quality sewerage channels cause contaminants to seep into well water, which is carried into river water, so that the water is polluted and becomes a source of infectious disease infections. The disposal of household waste must also be considered to prevent the spread of disease. This is to prevent humans from being directly contaminated with waste containing pathogens that can cause disease. Bacteria and pathogens can interfere with a toddler's immune system and increase the likelihood of gastrointestinal infections (Zalukhu et al., 2022). Therefore, it can be concluded that environmental cleanliness is one of the most essential factors for achieving health.

There is a reciprocal and very close relationship between nutritional adequacy and infectious diseases. Toddler infections impair the body's ability to absorb nutrients optimally, resulting in a disparity between the amount of nutrients required and the amount absorbed (Purba et al., 2020). If this malnutrition continues to occur, it can cause stunted growth in toddlers (Septiyani et al., 2021). Conversely, the state of malnutrition in toddlers causes them to be susceptible to infection because their immune system decreases.

In terms of epidemiology, diseases such as infections are described as the result of maladjustment, or the inability of a person to adapt to their environment, and are a social phenomenon where diseases can appear at any time and infect all levels of society. The process of disease occurrence is caused by interactions between humans or individuals as hosts, agents, and the environment (Irwan, 2017). Host is all the factors found in humans (the characteristics of a person) that can affect the development of the disease. The human factor is very complex in disease and depends on the characteristics of each individual. These factors, which often include age, gender, type of work, economic level, level of education, trust, behavior, lifestyle, and so on, are often called predisposing factors (Pambudi & Lolo, 2021).

Pathogens or agents are substances, living organisms, or infectious bacteria that can cause disease and other health issues. The transmission of disease can be facilitated by a wide variety of environmental, mechanical, and even non-biological factors. The term "environment" refers to all external factors in the form of a physical, biological, social,

and economic environment. Environmental factors play a significant role in determining the emergence of individual characteristics in a host, as well as in the progression of disease (Pambudi & Lolo, 2021). Environment is an external factor that influences exposure probability. Human characteristics or favorable factors, such as a person's level of education and income, have a significant impact on the availability and quality of basic cleaning equipment in the house of an individual or family (Ekadipta et al., 2021).

The level of education a person has influences their healthy living behaviors; the higher the level of education, the easier it is to obtain new, constructive information. In addition to one's level of education, one's income influences healthy living habits. When compared to people with low or medium incomes, people with higher incomes find it easier to buy or build basic sanitation facilities that are adequate and meet health requirements (Pambudi & Lolo, 2021). Behavior refers to a person's willingness or proclivity to act in response to a specific object. Behavior has a significant impact on the level of public health. The physical, biological, and sociocultural environment are all environmental factors. Hygiene practices are an example of a behavioral factor. The quality of the living space can be impacted by occupant behavior (Herawati et al., 2020).

Fewer studies have been conducted on water, sanitation, and hygiene (WASH) practices in Indonesia than in other developing countries. Based on the description of the low level of behavior in maintaining environmental hygiene, the availability of sanitation facilities, and the presence of environment-based diseases in Indonesia, the researcher is interested in researching WASH practices at the stunting locus. This study aimed to determine the correlation between demographic variables and water, sanitation, and hygiene (WASH) practices at the stunting locus.

Research Methods

The method in this study used a correlational quantitative method with a cross-sectional design. This method used to examine several variables at once: demographic characteristic and WASH practices variables. This study was conducted in Sukamulya Village, Rancaekek District, and Bandung Regency between August until December of 2022. The study population consisted of 463 respondents, who are the residents of the village of Sukamulya. Total sampling was used, resulting in a sample size of 463. Researchers approached local officials, such as village heads and heads of family welfare empowerment, to be able to access samples.

A questionnaire adapted from previous studies conducted in Iran and Ethiopia was used as the research instrument. The instrument contained questionnaires on socio-demographic data, environmental factors (access to clean water, sanitation, and hygiene), parents' knowledge and attitudes towards children's food safety, children's eating habits, and children's anthropometry—all translated into Indonesian. Through in-person interviews and direct observation, the instrument is to be utilized. The instrument for research was subjected to an ethical evaluation on August 2, 2022, with the ethical number 739/UN6.KEP/EC/2022. Then, a test of validity was conducted using the Pearson product moment showed that items in the questionnaires are valid because r test $\geq$ r table, with a different value in each question. The test of reliability was conducted using the Alpha Cronbach technique showed a value of r = 0.859, so the instrument had a strong reliability value (> 0.800).

The collected data were analyzed using univariate and bivariate techniques. Through bivariate analysis and the Chi-Square test, this study determined the correlation between the two variables. If the p-value is less than 0.05, there is a significant correlation between the two variables. Whereas if the p-value is greater than 0.05, there is no significant correlation between the two variables. The researchers used SPSS version 26 for Windows to facilitate testing.

Results

The findings of this study are presented in univariate and bivariate analysis. Univariate analysis was performed to determine the percentage of each variable and bivariate analysis using Chi-Square to determine the correlation between the two variables.
Characteristics of Respondents

Table 1. Frequency Distribution of Respondent Characteristics (n=463)

Variable	Frequency	Percentage (%)
Age		
< 20 years	**15**	**3.2**
20 – 45 years	**242**	**52.3**
> 45 years	**206**	**44.5**
Level of Education		
No school	**11**	**2.4**
Elementary school	**106**	**22.9**
Junior high school	**145**	**31.3**
Senior high school	**171**	**36.9**
University	**30**	**6.5**
Head of Family's Employment Status		
Unemployed	**63**	**13.6**
Employed	**400**	**86.4**

According to Table 1, the majority of respondents were aged 20-45 and 36.9% of the respondents have at least a senior high school diploma. Most of their head of family is employed.

WASH Practices

Table 2. Frequency Distribution of Respondents' WASH Practices (n=463)

WASH Practices	Frequency	Percentage (%)
Good	**235**	**50.8**
Poor	**228**	**49.2**

According to Table 2, 235 respondents (50.8%) had good WASH practices, while 228 respondents (49.2%) had poor WASH practices.

Cross Tabulation of WASH Practices Based on Respondents' Characteristics

Table 3. Cross-tabulation of WASH Practices Based on Respondents' Characteristics

Characteristics of Respondents	WASH Practices				Total	
	Poor		Good			
	Frequency	Percentage (%)	Frequency	Percentage (%)	n	(%)
Age						
< 20 years	**11**	**73.3**	**4**	**26.7**	**15**	**100.0**
20 – 45 years	**115**	**47.5**	**127**	**52.5**	**242**	**100.0**
> 45 years	**102**	**49.5**	**104**	**50.5**	**206**	**100.0**
Level of Education						

No school	**8**	**72.7**	**3**	**27.3**	**11**	**100.0**
Elementary school	**66**	**62.3**	**40**	**37.7**	**106**	**100.0**
Junior high school	**74**	**51**	**71**	**49**	**145**	**100.0**
Senior high school	**70**	**40.9**	**101**	**59.1**	**171**	**100.0**
University	**10**	**33.3**	**20**	**66.7**	**30**	**100.0**
Head of Family's Employment Status						
Unemployed	**198**	**49.5**	**202**	**50.5**	**400**	**100.0**
Employed	**30**	**47.6**	**33**	**52.4**	**63**	**100.0**

According to Table 3, the age group with the highest percentage of good WASH practices is the 20–45 years old respondent group, with a percentage of 52.5%. Among all respondents' educational backgrounds, those with a college degree showed the highest percentage of good WASH practices (66.7%). The employed family head has a higher percentage of good WASH practices (52.5%) than those who are unemployed.

Correlation of Demographic Characteristics with WASH Practices

The results of testing the effect of the demographic characteristic variables on the respondents' WASH practices are presented in Table 4 below:

Table 4. Chi-Square Test Results Demographic Characteristics with WASH Practices

Variable	Chi-Square test	p-value
Age	**3.776**	**0.151**
Level of Education	**17.564**	**0.002**
Head of Family's Employment Status	**0.077**	**0.887**

Based on the results of Chi-Square test presented in Table 4, it is known that the demographic characteristics variable of education level has a significant correlation with respondent's WASH practices ($p < 0.05$), while the age and head of family's employment status do not show any significant correlation to the respondent's WASH practice ($p > 0.05$).

Discussion

WASH practice at the stunting locus

The high prevalence of communicable diseases brought on by an unhealthy environment, inadequate access to essential health services, and/or improper hygiene practices are among the factors that contribute to the phenomenon of stunting (Rah et al., 2020). According to findings published by Ngure et al. (2014), practices pertaining to water, sanitation, and hygiene (WASH) have an impact on children's nutritional status, particularly with regard to linear growth in early childhood. Based on Table 3, the majority of respondents had good WASH practices: 235 respondents (50.8%), and 228 respondents (49.5%) had poor WASH practices. Hygiene is the first and most important rule of health protection. The definition of cleaning is the elimination of visible contaminants from an environment. Hygiene is the protection of a healthy environment and the elimination of pathogens from it.

The correlation between age and WASH practice

The analysis of the Chi-Square test between age and WASH practice showed a p-value of $0.151 > 0.05$. This indicates that there was not a significant correlation between age and WASH practices among the respondents, which led to the rejection of hypothesis 1. In other words, the washing habits of the younger and older respondents are fairly similar to one another. This is possible because everyone

has their own technique for practicing water, sanitation, and hygiene (WASH) on themselves. As according research conducted by Joshi & Amadi (2013), a person's age has no correlation with their WASH practices.
Age is a factor that influences a person's attitude towards existing social activities. According to Table 4.3, respondents with the highest percentage of good WASH practices (52.5%) are in the productive age range of 20-45 years. At a productive age, a person works optimally and has a mature mindset, which influences his performance. As a result, people of productive age can choose and determine a positive attitude toward sanitation implementation, resulting in excellent sanitation practices. Adults and middle-aged people with a higher moral commitment to social values and norms are more likely than any other age group to engage in WASH practices. At this time, a person will transition from seeking knowledge to applying knowledge (Sinatrya & Muniroh, 2019).

Age variables and WASH practices are very important to follow up on in stunting prevention because the more mature a person is, the more committed he is to environmental hygiene practices. The role of nurses in this case can be to provide education and habituation to the community, especially the adults and elderly, so that they can keep their environment clean and healthy instruct the next generation. The age variable's challenge is a person's unwillingness and inability to carry out WASH practices in order to keep a clean environment.

The correlation between level of education and WASH practice

One of the factors that affect an individual's attitude is their level of education. The findings of the bivariate analysis using the Chi-Square test showed a p-value of 0.002 and indicate that there was a significant correlation between the level of education and their WASH practices ($p < 0.05$), so that hypothesis 2 was accepted. This could be because the higher the respondent's education level, the greater his environmental knowledge and awareness. Respondents' adequate knowledge of good Water, Sanitation, and Hygiene (WASH) practices can influence them to carry out good WASH practices. In line with the opinion of Jumarsa et al., (2020), people who are quite knowledgeable about the environment have a fairly positive attitude towards environmental cleanliness and sanitation. The level of education is one of the factors that influences community participation in environmental management (Septiana & Sulistinah, 2021). According to Table 3, the respondents with the highest poor WASH practices were respondents who did not go to school (72.7%), while the highest good WASH practices were respondents with a university education level (66.7%). It is believed that education can influence a person's attitude toward his environment, which is necessary for enhancing the welfare of the entire community.

Education level effects the way of thinking and perspectives in such a way that it guides people in making decisions. This means that people with higher education tend to make more accurate and appropriate decisions, including those related to environmental hygiene and health. Someone is more aware of the important benefits of the environment, so they tend to participate. Putra et al., (2021) say that a lack of information and knowledge about how to keep the environment clean can lead to bad hygiene habits. Good WASH practices are demonstrated when environmental knowledge is supported by positive attitudes and behaviors. Harikatang et al., (2020) revealed the same thing, that good knowledge does not guarantee people's behavior because knowledge cannot determine people's life pattern. If parents already have good information about their child's nutrition, but the economic conditions are not sufficient, then their child's nutritional status may be affected. Economic and employment status affect a person's ability to meet daily needs.

The variable level of education and WASH practices is very important to follow up on in stunting prevention because the higher a person's educational level, the wiser he is in making decisions, including in terms of environmental hygiene practices. The role of nurses in this case can be to provide education to the community, which is carried out through educational institutions.

This is intended so that students have good knowledge of environmental hygiene. The challenge in the education level variable is someone's lack of knowledge about WASH practices for keeping their environment clean.

The correlation between head of family's employment status and WASH practice

According to the Chi-Square test results, the employment status of the head of the family with WASH practices obtained a p-value of 0.887 > 0.05, meaning that there is no significant correlation between the employment status of the head of the family and the respondent's WASH practices, so that hypothesis 3 is rejected. This happens due to the employment status of the head of the family, who works and does not have time at home because busyness does not always ignore good WASH practices at home. In line with the research of Muryawan et al. (2021), which stated that there was no significant correlation between employment and their disease prevention knowledge, attitudes, and behavior.

Based on Table 3, the obtained analysis results indicate that employed respondents (52,4%) have better WASH practices than unemployed respondents (50.5%). The proportion of respondents who have poor WASH practices is higher among the unemployed (49.5%) than among the employed (47.6%). Those who employed have the opportunity to interact, share information, and inspire with their colleagues in order to increase their WASH-related knowledge and information. Those who unemployed spend more time at home on household and personal matters and have fewer opportunities fo social interaction.
Other possible influences that cause employment status do not significantly affect WASH practices. One of them is competency in understanding health literature and exposure to health education related to water, sanitation, and hygiene (WASH). Hygiene practices affect the incidence of gastrointestinal infections in toddlers. Personal and household food hygiene reduces the risk of infectious diseases that cause poor nutritional status in toddlers (Bella et al., 2020).

Study Limitations

The limitation of this study is the use of a cross-sectional method that measures WASH practices only at one particular time, while behavior is dynamic and can change at any time.

Conclusion

Demographic characteristics can influence a person's motivation to maintain environmental sanitation and hygiene. Based on the results of research and data processing regarding the correlation of demographic characteristics with the Water, Sanitation, and Hygiene (WASH) practices at the stunting locus, it is concluded that most of the people at the stunting locus have good WASH practices. The level of education domain has a significant correlation to WASH practice, while the age and occupation domains of the head of the family have no significant correlation to WASH practice. The level of education influences the way of thinking and views in such a way that it guides people in making decisions, including those related to environmental hygiene and health. So, it is hoped that the government and policymakers will hold programs to teach the public more about WASH practices, especially when it comes to keeping the environment clean at the stunting locus. It is hoped that future researchers can examine water, sanitation, and hygiene (WASH) practices to reduce stunting rates using better methods such as case series so that the causes and effects of these variables can be identified.

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