

## Description Of Community Knowledge And Attitude On Clean Water Sanitation In Flood Prone Areas On Pasar V Tembung Street Percut Sei Tuan District Deli Serdang District

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**ABSTRACT.** Indonesia is a disaster-prone area. One of the most common disasters is flooding. Water is one of the important components for human survival. Water has a direct impact on human health. Flood-prone areas are at risk of carrying a disease called water bone disease, especially environmental-based diseases such as diarrhea. The importance of community knowledge and attitudes towards clean water sanitation can reduce the risk of flooding. The purpose of this study was to describe the knowledge and attitudes of the community towards clean water sanitation in flood-prone areas on Pasar V Medan Tembung Street, Percut Sei Tuan District, Deli Serdang Regency. This research was conducted on May 25 2023, 12.30 WIB until finished. This research is a quantitative research with a descriptive research type. Data collection was carried out by interviews and questionnaires. The results showed that 100% of the data obtained from 10 respondents stated that their home environment was prone to flooding which disrupted the quality of clean water from each respondent's house which was prone to flooding, then 10% of the water quality was poor and polluted during floods and 30% of respondents said the water supply was unstable during floods, and 40% of respondents said they experienced diarrhea during floods and 20% of respondents said they experienced itching during floods. The conclusion of this study is that the area prone to flooding on the Tembung V market road, Percut sub-district, Sei Tuan, Deli Serdang district greatly affects the quality of clean water around the place.

**Keywords:** Flood, Knowledge, Water Sanitation, Attitude

### 1. INTRODUCTION

Flooding is a natural phenomenon where there is excess water that is not accommodated by the drainage network in an area so that it can cause detrimental inundation. Losses caused by flooding are difficult to overcome, both by the community and related agencies. Floods are caused by various factors, including the condition of the rain catchment area, the duration and intensity of the rains, land cover, topographical conditions, and the capacity of the drainage network.

Flood is defined as a condition of a river, where the flow of river water is not accommodated by the riverbed resulting in runoff or inundation on land that should be dry.

Flooding is also referred to as a state of surface runoff that is relatively high and is no longer accommodated by river channels or drainage canals (Mawardi, E., & Sulaeman, A., 2011).

Floods are often caused by rain that lasts for several hours. Floods in Indonesia also occur in big cities like Jakarta and its surroundings. This disaster could not be anticipated because of the misunderstanding of the concept of drainage from the start (Agus R, 2009).

Several studies conducted in the tropics found patterns of diarrheal disease to follow seasonal patterns. Diarrheal disease that occurs shows a peak during the rainy season, floods, and drought also shows a new relationship with the incidence of diarrheal disease. The main causes of diarrheal diseases associated with contaminated water such as cholera, *Cryptosporidium*, *Escherichia coli*, *Giardia*, *Shigella*, Typhoid, and viruses such as hepatitis A (World Health Organization, 2003).

Water is one of the most important components in the continuity of human life and other living things. Water has the ability or direct influence on humans, especially human health. The health effects depend very much on the quality of the water used, and water can also function as a distributor or spreader of disease (Slamet, JS, 2009).

Water can be a medium for the spread of diseases known as water borne diseases, including drinking water. Several studies have shown that diarrhea is a disease caused by water quality. As research conducted by Purwaningsih and Mafazah (2013), that there is a relationship between the availability of clean water, waste disposal facilities and the incidence of diarrhea in toddlers (Rizkiyanto M, 2014). Lack of clean water coverage is a factor in the incidence of diarrheal disease (Singh, RBK, et.al., 2011).

The importance of water sanitation for the community is still a top priority issue in the Pacific region, including Indonesia. Water sanitation is included in environmental sanitation management. Covering, clean water sanitation, availability of latrines, waste management, disposal of wastewater disposal channels (SPAL) and drainage channels (watersheds). With clean water sanitation, for example, it will improve the quality of the water used, thus increasing the degree of public health (Rizkiyanto M, 2014).

This is what encourages researchers to carry out environmental sanitation counseling to increase knowledge, attitudes and actions of the community to behave healthily. Moreover, flood-prone areas require the right knowledge, attitudes and actions in maintaining health. Poor hygiene practices and unsafe drinking water contribute to 88 percent of child deaths from diarrhea worldwide, and even to other diseases. For children who survive, frequent diarrhea can lead to nutritional problems, preventing children from reaching their full

potential. This condition then has serious implications for the quality of human resources and the productive capacity of a nation in the future (Unicef, 2012).

The surrounding community still uses river water to meet their needs for bathing, washing and toilets. However, for their consumption needs they use village PAM water which is managed by the local community. But most of them use well water for consumption. Several villages in the Sawang sub-district are classified as prone to flooding due to inadequate watersheds (DAS), excavation C which is prone to landslides and reduced greenery around the mountains. There is a possibility that community water will be polluted by flood water, so knowledge about sanitation is needed in order to avoid disease caused by flooding. This is in accordance with the study of the Indonesia Sanitation Sector Development Program (ISSDP) in 2006, which showed that 47% of people still defecate in rivers, rice fields, ponds,

The author's assumption that there is still a lack of public awareness to care about environmental health causes the author to feel the need to disseminate information in the form of an overview of knowledge and attitudes about environmental sanitation so that it is hoped that public health will improve. Based on research conducted by Khoiran (2015) that good sanitation management of residential areas is able to provide encouragement for community empowerment to overcome flood-prone problems and the possibility of avoiding various occurrences of diseases caused by flooding (Khoiron and Dewi R, 2015).

## **2. RESEARCH METHODE**

This research is a research using quantitative methods with descriptive research type. It is called quantitative because the data collected in this study can be analyzed using statistical analysis or numbers, as well as research that requires the use of numbers a lot, starting from data collection, interpretation of the data, as well as the appearance of the results which can be presented in the form graphs, diagrams, tables and hypothesis testing. This research was conducted on May 25 2023, 12.30 WIB until finished on Jln. Tembung V Market, Percut Sei Tuan District, Deli Serdang Regency.

The population in this study is that there are 10 people who are on Jln. Tembung V Market, Percut Sei Tuan District, Deli Serdang Regency with different criteria and willing to be interviewed. Of the ten who filled out the questionnaire, we also made it a sample in this journal.

Data collection uses a questionnaire (Questionnaire). Questionnaires are a number of written questions that are used to obtain information from respondents, in this case, namely

personal reports or other matters. "Questionnaire is a data collection technique that is carried out by giving a set of questions or statements that will be given to respondents to answer."

The results of the 10 questionnaires in this study serve to provide information to readers related to the answers from respondents, and the use of this questionnaire is to obtain data about the Description of Community Knowledge and Attitudes towards Clean Water Sanitation in Flood-Prone Areas on Jln. Tembung V Market, Percut Sei Tuan District, Deli Serdang Regency. The type of questionnaire used in this study was a direct questionnaire, which is in the form of a Likert scale with closed questions, that is, the answers to the questions posed are already available. In this case, the researcher provides several alternative answers to the respondents to the questions asked.

### **3. RESULT AND ANALYSIS**

#### **3.1 Characteristics of Respondents**

**Table 1. Characteristics by Age**

No.	Age	Amount	Percentage
1.	<25	2	20%
2.	25-30	6	60%
3.	>30	2	20%
	Total	10	100%

Based on the results of the research shown in table 1. It is known that the age of the respondents is <25 years with a total sample of 2 people with a percentage of 20%, the age of the respondents is 25-30 years with a total sample of 6 people with a percentage of 60%, and the age of the respondents > 30 years with a total sample of 2 people with a percentage of 20%.

**Table 2. Characteristics by Gender**

No.	Gender	Amount	Percentage
1.	Man	3	30%
2.	Woman	7	70%
	Total	10	100%

Based on the results of the research shown in table 2. It is known that the gender of the respondents was male with a total sample of 3 people with a percentage of 30%, and female sex with a total sample of 7 people with a percentage of 70%.

**Table 3. Characteristics Based on Education Level**

No.	Education Final	Amount	Percentage
1.	SENIOR HIGH SCHOOL	7	70%
2.	College	3	30%
	Total	10	100%

Based on the results of the research shown in table 3. It is known that the last level of education of respondents was high school with a sample size of 7 people with a percentage of 70%, and universities with a total sample of 3 people with a percentage of 30%.

**Table 4. Characteristics by Occupation**

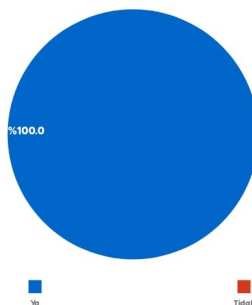
No.	Work	Amount	Percentage
1.	Trader	8	80%
2.	Student	1	10%
3.	civil servant	1	10%
	Total	10	100%

Based on the research results shown in table 4. It is known that the work of student respondents with a sample size of 1 person with a percentage of 10%, civil servants with a sample size of 1 person with a percentage of 10%, and traders with a sample size of 8 people with a percentage of 80%.

### 3.2 Community Environmental Sanitation Information

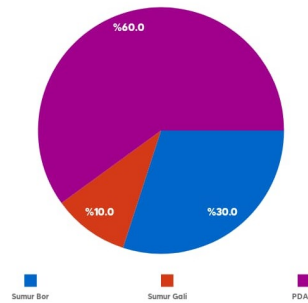
The results of a survey of community environmental information can be seen in the following pictures:

Question: Is your home environment prone to flooding?



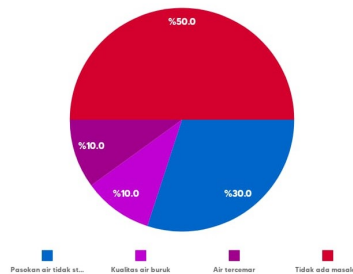
The picture above shows the results of our research. It can be concluded that 10 of the 10 respondents whose houses are prone to flooding are as much as 100%.

Question: How do you get clean water supply in your home environment?

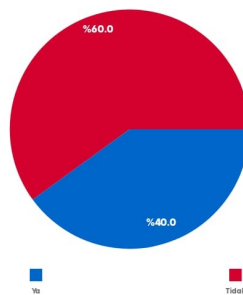


The picture above shows the results of our research. It can be concluded that out of 10 respondents, 60% used PDAM, 30% drilled wells, and 10% dug wells.

Question: Do you experience any of the following problems regarding the supply of clean water in your home environment?



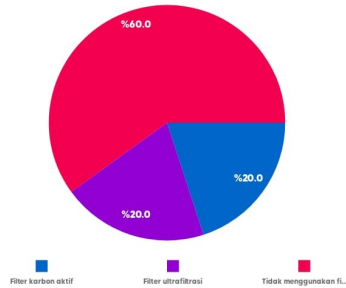
The picture above shows the results of our research. It can be concluded that 30% of the 10 respondents had unstable water supply, 10% poor water quality, 10% polluted water, and 50% without problems.



Question: Do you use a water filtration device or system in your home?

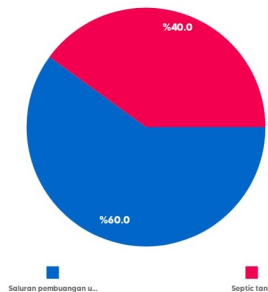
The picture above shows the results of our research. It can be concluded that out of the 10 respondents who used a filter, 40% and 60% did not.

Question: If yes, what type of filtration do you use?



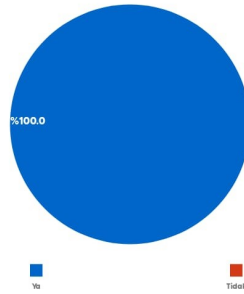
The picture above shows the results of our research. It can be concluded that of the 10 respondents who used a 20% activated carbon filter, a 20% ultrafiltration filter, and those who did not use 60% filtration.

Question: How do you dispose of waste water in your home environment?



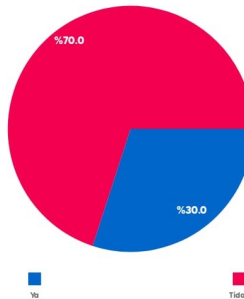
The picture above shows the results of our research. It can be concluded that 60% of the 10 respondents disposed of waste water in public sewers, and 40% in septic tanks.

Question: Does your home environment have access to adequate sanitation such as toilets that are clean and usable?



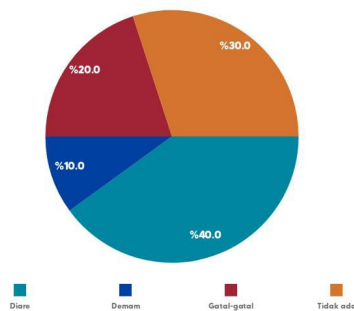
The picture above shows the results of our research. It can be concluded that 100% of the 10 respondents have toilets.

Question: Have you ever experienced a disease outbreak related to water sanitation in your home environment?



The picture above shows the results of our research. It can be concluded that 30% of the 10 respondents had experienced a disease outbreak, and 70% who had not.

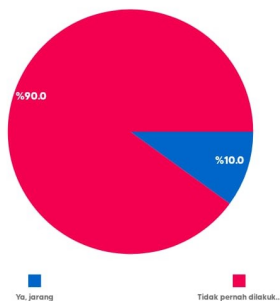
Question: . If yes, what type of disease has occurred?



The picture above shows the results of our research. It can be concluded that out of the 10 respondents, the most common diseases experienced during floods were 40% diarrhea, 20% itching, 10% fever and 30% not.



Question: Has the local government or related authorities taken any actions to manage water sanitation in your home environment?

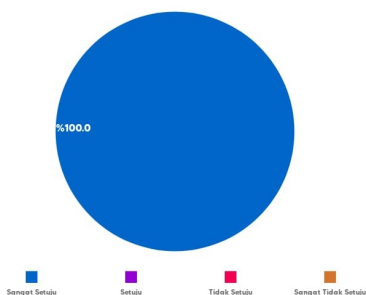


The picture above shows the results of our research. It can be concluded that out of 10 respondents, 10% rarely do the same. the local government or related authorities have taken actions to manage water sanitation in the home environment, and 90% have never done it.

### 3.3 Level of Community Knowledge About Clean Water Sanitation

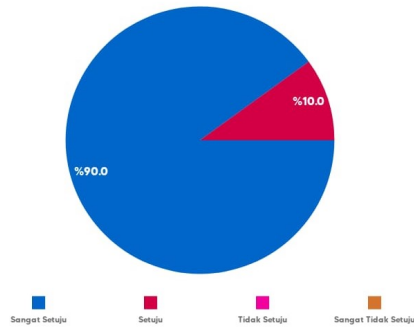
The survey results on the level of public knowledge can be seen in the following figures:

Question: Clean water is water that is clear, tasteless, odorless and colorless

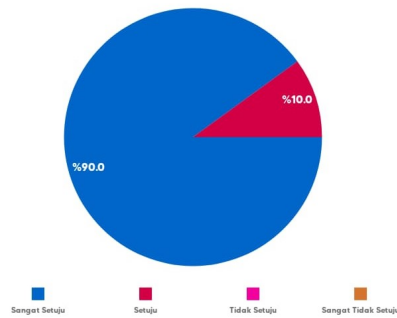


The picture above shows the results of our research. It can be concluded that all respondents strongly agree with the statement that clean water is clear water. tasteless, odorless and colorless which is 100%.

Question: Water is boiled before drinking

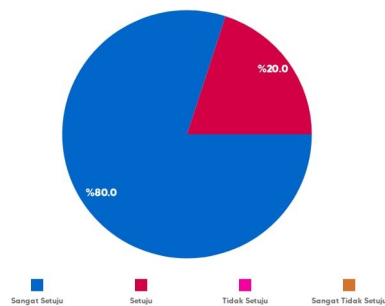


Question: Must have a healthy latrine (wc) with a goose neck and a septic tank



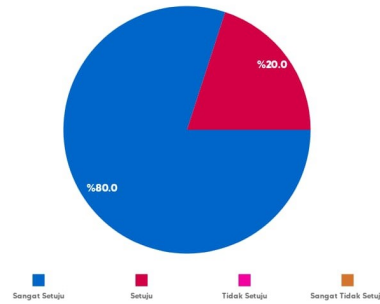
The picture above shows the results of our research. It can be concluded that as many as 90% of respondents strongly agree with must have a healthy latrine (wc) with a goose neck and a septic tank and as many as 10% agreed.

Question: Privately owned sewerage



The picture above shows the results of our research. It can be concluded that as many as 80% of respondents stated that they strongly agreed with ownership private sewerage and as many as 20% of respondents agreed.

Question: The well is 10m away from the septic tank



The picture above shows the results of our research. It can be concluded that as many as 80% of respondents stated that they strongly agreed the existence of the well is 10m away from the septic tank and as many as 20% of respondents agreed.

#### 4. DISCUSS

Based on the results of research on measuring people's knowledge and attitudes towards clean water sanitation in flood-prone areas on Jalan Pasar V Tembung, Percut Sei Tuan sub-district, Deli Serdang district, with 10 respondents, data was obtained that 100% of 10 respondents stated that their home environment was prone to flooding. Next, it is known that the 10 respondents obtained clean water supply using PDAM water as much as 60%, drilled wells as much as 30% and dug wells as much as 10%. Based on observations and interviews conducted in the field, the community said they prefer to use PDAM compared to drilled wells because the cost of constructing wells is much more expensive.

According to Efendi (2003) water quality, namely: the nature of water, the content of living things, energy substances or other components in water. Water quality is expressed by several parameters, namely physical parameters (temperature, turbidity, dissolved solids), chemical parameters (PH, dissolved oxygen, BOD, metal content), biological parameters (presence of lanktone, bacteria and so on). Water quality includes physical, chemical and biological conditions that can affect the availability of water for human life, agriculture, industry, recreation and other water uses, said Asdak (2004). The requirements for clean water to fulfill the need for clean water must meet two conditions, namely quantity and quality (Ministry of Health RI, 2005).

When a flood occurs, the residents' water sources, especially wells, are usually polluted by flood water so that it becomes cloudy. One important processing step to obtain clean water is to remove turbidity from the raw water. Turbidity is caused by the presence of small particles and colloids measuring 10 nm to 10  $\mu$ m. These tiny particles and colloids are none other than quarts, clay, plant residues,

The results showed that the level of knowledge of all respondents regarding water sanitation was good, this was shown from the total score of the questionnaire regarding knowledge which was in the range of 42 to 50. This phenomenon proved that the Tembung community had awareness of good water sanitation, so it was expected to be able to maintain water quality. clean during flood situations.

According to the HL Blum concept, behavior change after health education in society can be successful if it is accompanied by health promotion support, which includes intervention through predisposing, enabling and reinforcing determinants. Thus, health education is carried out to support better knowledge and attitudes towards clean water sanitation for flood-prone areas.

## **5. CONCLUSION**

Based on the results of the study, it can be concluded that the area prone to flooding on Jalan Pasar V Tembung, Percut sub-district, Sei Tuan, Deli Serdang district greatly affects the quality of clean water around the place, furthermore that diarrheal disease is a disease that often occurs when floods arrive and clean water supplies are difficult to obtain during floods and the community's knowledge of clean water sanitation is quite good, this can be seen from the community's ability to distinguish clean water from polluted water.

## 6. REFERENCES

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