

## **Relationship Between Community Knowledge and Flood Preparedness in Environment V, Dwikora Village**

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### **ABSTRACT**

Floods have an impact on the community, so that it is important for them to have knowledge in dealing with floods in order to reduce the risk and be responsive to flood conditions that will occur. The purpose of this study was to identify the Relationship between Knowledge and Flood Preparedness in Environment V, Dwikora Village. This research method is descriptive correlation with an approach using a Cross Sectional design. The population is the community of Environment V Dwikora Village with a sample size of 229 respondents using Purposive sampling techniques. The research instrument used a questionnaire and used the chi-square test. The results of the study showed that the knowledge of the community in Environment V, Dwikora Village, was mostly knowledgeable, as many as 95 people (41.5%) and had flood preparedness in the category of not prepared as many as 116 people (50.7%). Statistical tests showed that there was a relationship between community knowledge and flood preparedness with a p value = 0.000 (<0.05). It is recommended that efforts be made to increase community knowledge about flood preparedness through education and training programs, as well as providing accurate information about flood preparedness.

#### **Keywords:**

Knowledge, Preparedness, Flood

## **1. INTRODUCTION**

Flooding is an event where water exceeds the normal height and inundates land or land that is usually submerged for a certain period of time, usually caused by continuous rain resulting in flooding in rivers, lakes, and seas (Nurrahmah, 2015). Floods usually occur because rivers or channels are unable to drain rainwater that flows on the surface, usually floods often occur in Indonesia (Abya Salma Sajida, Apip Ripki Permana, Elsyia Laura, 2023). Indonesia is geographically located in an area prone to natural disasters such as landslides, earthquakes, volcanic eruptions, and floods (Lindawati & Wasludin, 2017).

Indonesia is one of the areas that often experiences flooding and the area of Indonesia that has been affected by floods has occurred 351 times (BNPB, 2023). In 2024, floods in Indonesia occurred 124 times. The prevalence of flooding in North Sumatra in 2024 occurred 22 times, affecting 5,375 people (BNPB, 2024). In Medan City, flooding often occurs every time heavy rain comes and in the Dwikora Environment it often occurs every time it rains.

The floods that occur have an impact on the community so that knowledge is needed in dealing with flood situations to reduce the risks experienced. In this case, the community needs to participate in facing the threat of flooding, with sufficient knowledge and early preparation in dealing with (Yatnikasari et al., 2021). Knowledge about floods is important for someone to be able to take protective and preparedness measures in dealing with floods if they occur unexpectedly.

Based on research by (Kumambouw et al., 2023), it was stated that the level of knowledge about flooding of respondents was in the good category with a score of 84.7%. The high percentage of knowledge level was obtained from the experience of people who have lived in Bukit Duri for a long time. This means that the level of knowledge of flood preparedness of the Bukit Duri community is influenced by experience. In addition, knowledge can influence the attitude and awareness of the community to prepare for disasters, especially people who live in areas prone to natural disasters, and motivate the community to prepare in anticipating the possibility of flooding.

Preparedness is a state in which a community, both individually and collectively, can predict the possibility of a disaster in the future (Erlia et al., 2017). Disaster preparedness helps the community plan what actions to take if a flood occurs. The community must have knowledge and always try to understand the level of preparedness and be alert when a flood occurs (Rahma & Yulianti, 2020)

Community preparedness, especially in flood-prone areas, must be built. The success of handling evacuation or evacuation during a flood is highly dependent on the preparedness of the community itself. Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken when a flood occurs. Based on research by (Ula et al., 2019), community knowledge about flood disasters in Pancasari Village is categorized as moderate, with an average score of 77.14%. Community preparedness for flood disasters in Pancasari Village is categorized as moderate with an average score of 92.86%. Statistical tests show that there is a significant relationship between public knowledge about flood disasters and public preparedness for flood disasters in Pancasari Village.

Based on the results of an initial survey conducted on the village and also the local RT and RW heads, it was stated that in the Dwi Kora village, the community still lacks understanding of how to prevent flooding in the Dwi Kora village and many people still litter in places. The community also said that when a flood comes, the house is always filled with water and wet items are submerged. The community still has an indifferent attitude towards the dangers of flooding with gutters full of garbage being cleaned. Floods that often occur in noble devotion, noble deeds and on the road across. This study aims to identify the relationship between knowledge and flood preparedness in Environment V, Dwikora Village.

## 2. METHOD

This type of research is descriptive correlation with an approach using Cross Sectional design. The population in this study was the community of the environment V Dwikora Village, with a sample size of 229 respondents using the purposive sampling technique. The inclusion criteria for respondents are people who lives in Dwikora Village, which is a flood-prone area, age 18-60 years, sign informed consent, domiciled in Environment V of Dwikora Village, have experienced flooding in the area where they live and not currently seriously ill or have physical/mental limitations that could interfere with filling out the questionnaire. Exclusion criteria are not willing to participate in the research and not present at the time of data collection. Data collection in this study used a questionnaire and data analysis used the Chi-square test.

## 3. RESULTS

After the data was obtained, statistical analysis was carried out and the following results were obtained:

Table 4.1  
 Distribution of Respondent Characteristics in Environment V, Dwikora Village  
 (n=229)

Characteristics	N	%
Gender :		
Male	110	48.0
Female	119	52.0
Age :		
18-30 Years	36	15.7
31-40 Years	86	37.6
41-50 Years	71	31.0
>50 Years	36	15.7
Education :		
Primary	40	17.5
Junior High	67	29.3
Senior High	77	33.6
College	45	19.7
Residence Status :		
Home Owner	83	36.2
Rental	71	31.0
Living with Family	75	32.8

Based on table 4.1, its shows that majority of respondents were the majority of female 119 people (52.0%), age 31-40 years 86 people (37.6%), 77 people (33.6%) and residential status is homeowner 83 people (36.2%).

Table 4.2  
Community Knowledge in Environment V, Dwikora Village (n=229)

Knowledge	N	%
Good	60	26.2
Simply	95	41.5
Less	74	32.3

Based on table 4.2, it shows that public knowledge about flooding in environment V, Dwikora Village 95 people (41.5%).

Table 4.3  
Flood Preparedness in Environment V, Dwikora Village (n=229)

Readiness	N	%
Alert	113	49.3
Not Alert	116	50.7

Based on table 4.3, it shows that the majority of flood-prone preparedness in area V, Dwikora Village is not prepared 116 people (50.7%).

Table 4.4  
Cross Tabulation of the Relationship between Knowledge and Flood Preparedness in Environment V, Dwikora Village (n=229)

Community Knowledge	Flood Preparedness				Total	P	
	Alert		Not Alert				
	n	%	n	%	n		%
Good	44	19.2	16	7.0	60	26.2	0,000
Fair	39	17.0	56	24.5	95	41.5	
Poor	30	13.1	44	19.2	74	32.3	
Total	113	49.3	116	50.7	229	100	

Based on table 4.4 shows that the knowledge of the community in the environment V, Dwikora Village with a good category of 60 people (26.2%), where the flood-prone preparedness category is alert 44 people (19.2%) and the category is not alert 16 people (7%). The category of fair knowledge is 95 people (41.5%), respondents who are alert 39 people (17%) and not alert 56 people (24.5%). Knowledge is poor 74 people (32.3%) with alert 30 people (13.1%) and the category is not alert 44 people (19.2%). The results of the chi-square statistical test show that the relationship between knowledge and flood Preparedness in the Environment V of Dwikora Village is a significant relationship with a p value = 0.000 (<0.05)

#### 4. DISCUSSION

Based on the research results, the knowledge of the community in Environment V, Dwikora Village regarding flood disaster preparedness showed that the majority was sufficient, namely 95 people (41.5%). This is in line with the research of (Kumambouw et al., 2023) which stated that community knowledge in flood disaster preparedness was in the sufficient category with 37 respondents (52.9%). Based on research by (Suwaryo & Yuwono, 2017) there are things that influence community knowledge about disaster preparedness, namely age, education and occupation, the most dominant being age in influencing knowledge. In addition, based on (Aklima, Rahmania Amni, Nurhidayah, 2024) community knowledge about flood disasters can be influenced by the experience of experiencing flood disasters.

The limited knowledge about community preparedness in flood disaster management in this study based on the questionnaire is that there are still some who do not know some questions related to preparedness (emergency response plan), preparedness (resource mobilization), preparedness (disaster warning system). In addition, based on previous interviews with residents, there are still many residents who do not know the definition of the disaster itself, the exact cause of the disaster, the impact of the flood disaster, how to prevent it and when the flood will come because floods sometimes come suddenly. This makes the level of knowledge about community preparedness in flood disaster management categorized as sufficient.

Based on the results of the study, it shows that community preparedness for flood disasters in the Environment V Village is mostly in the unprepared category, namely 116 people (50.7%). When a flood occurs, they choose to play in the water. In addition, there are still those who use electronic devices during floods. Although the house is not flooded, only the yard and the roads around the house are still dangerous. These results are in line with the research of (Findayani, 2015) which states that community preparedness for flood disasters is still lacking and local people have not been able to predict the arrival of floods. Based on research by (Suharini et al., 2019) that the lack of experience in dealing with flood disasters causes people in areas not affected by floods to have a lower level of responsiveness compared to people affected by floods.

Preparedness can be in the form of preparing an emergency response plan, meaning that with this plan the community and government can know what actions to take and what to prepare for when a disaster occurs (Erlia et al., 2017). This study is in line with the research of (Ardiandari, 2022) that most of the respondents' preparedness in facing flood disasters was sufficient, namely 44 people (64.7%). Likewise, the research of (Ula et al., 2019) stated that most respondents had moderate preparedness which was interpreted as sufficient, namely 65 people (92.85%).

Statistical tests using chi-square show that there is a Relationship between Knowledge and Preparedness for Floods in Environment V, Dwikora Village with a p value of 0.000 (<0.05). This study is in line with (Saipiatuddin, 2022) study, which states that there is a relationship between knowledge and preparedness for tidal flood disasters, meaning that if the level of knowledge is good, the level of disaster preparedness is also good. However, this study is different from the study of (Ardiandari, 2022) which states that there is no relationship between the level of knowledge and preparedness in facing flood disasters in Tanjung Aman Village with a Spearman rank correlation of 0.176 indicating a positive correlation direction with

low correlation strength, meaning a positive correlation means that the higher the level of knowledge, the higher the level of preparedness. Good knowledge of flood risks can make people more prepared and alert in dealing with flood disasters, thereby reducing the risk of loss of life and infrastructure damage. Good knowledge can help people make the right decisions when facing flood disasters (Viona Yashinta, Arief Laila Nugraha, 2019).

According to (Lindawati & Wasludin, 2017) there is a relationship between knowledge and preparedness with an OR value of 3.85, which means that people with high knowledge have 4 times more preparedness than people with low knowledge. Based on (Susilawati et al., 2025), public knowledge about flood risks can be influenced by factors such as education, experience, and access to information. (Rusiyah, 2017), which states that there is a positive relationship between knowledge and preparedness in facing disasters. Frequent provision of education about disasters makes someone more prepared in facing natural disasters.

## **5. CONCLUSION**

Based on the research results, it was concluded that the knowledge of the community in the V environment of Dwikora Village was mostly knowledgeable, 95 people (41.5%). The community's preparedness for flood risks was found to be mostly not prepared, 116 people (50.7%) and there was a relationship between community knowledge and flood risk preparedness with a p value = 0.000 <0.05.

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