



The Description of Knowledge and Attitude About Flood Disaster Preparedness of Residents In Kwarasan Sub-District

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ARTICLE INFO

Article History:

Submitted: 18-07-2023

Revised: 08-08-2023

Accepted: 09-08-2023

 doi.org/10.58545/jkmi.v2i2.125

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ABSTRACT

Flood is a natural phenomenon triggered by natural processes and uncontrolled human activity. In early 2023, flooding in Kwarasan Sub-District occurred twice in January and February which were the worst floods after 2007. Knowledge and attitude of preparedness are important things to have because knowledge of disaster preparedness will affect a person's attitude when a disaster occurs, which be used in the long term to minimize the impact of the disaster. This research aims to know the description of the knowledge and attitude of flood disaster preparedness of residents in Kwarasan, Grogol, Sukoharjo. The type of research used is a quantitative description with survey methods. The sample in this research was 78 heads of families in the Kwarasan sub-district using purposive sampling and stratified random sampling techniques. The results of the research on preparedness knowledge were in the good category with 76 (97.4%) respondents and 2 (2.6%) respondents in the sufficient category. Then the results of the research on preparedness attitudes were in the good category with 61 (78.2%) respondents and 17 (21.8%) respondents in the sufficient category. The Conclusion is the description of the knowledge and attitude of flood disaster preparedness is mostly in the good category. Knowledge and attitude of flood disaster preparedness is a good category because the residents have received or often receive education and training on preparedness, floods have become a routine habit that occurs in their area, and experience dealing with floods for many years. Then residents have a good attitude of preparedness because they have been equipped with the knowledge obtained from education and training on preparedness.

Keywords: flood, knowledge, attitude, preparedness, disaster

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How to cite:

Rahmawati, D. N., & Prajayanti, E. D. (2023). The Description Of Knowledge And Attitude Of Flood Disaster Preparedness Of Residents In Kwarasan Sub-District. *Jurnal Kegawatdaruratan Medis Indonesia*, 2(2), 115–129.

<https://doi.org/10.58545/jkmi.v2i2.125>

I. INTRODUCTION

Flood is a natural phenomenon triggered by natural processes (rainfall conditions, groundwater system (geohydrology), geological structure, rock type, geomorphology, and land topography) and uncontrolled human activities in exploiting nature (Musfida et al., 2021). Floods are an annual routine, the location of the incident can be urban or rural, in developing countries or even developed countries (Septiana et al., 2022).

The Global Natural Disaster Assessment Report 2021 confirms that floods are the first-ranked disaster in the world with a percentage of 56.13% (UNDRR, 2022). In Indonesia, based on the Data Informasi Bencana Indonesia (DIBI) flood incidents in 2022 ranked first with a total of 1,524 flood incidents (BNPB, 2022). The number of flood incidents in Central Java based on the Data Informasi Bencana Indonesia (DIBI) for 2022 ranks first with a total of 212 incidents (BNPB, 2022). In Sukoharjo the number of flood incidents in 2022 is 62 incidents (BPBD Sukoharjo, 2022).

Grogol is one of the sub-districts in Sukoharjo which ranks first with 14 flood incidents. The flooding in Grogol District was due to its location which is lowland and close to tributaries of the Bengawan Solo River, namely the Wingko River and

the Kembang River. Floods with a total of 14 incidents in Grogol District hit several Sub-Districts such as Cemani, Banaran, Kwarasan, Langenharjo, Grogol, Kadokan, Telukan, Parangjoro, Pandeyan and Madegondo (BPBD Sukoharjo, 2022).

Kwarasan Sub-District in 2022 ranks first with 3 incidents in the last year and in 2023 there have been 2 floods in January and February. The flood in February 2023 was the worst flood incident after the flood in 2007 where 4 sub-districts were affected by the floods. The impact of the flood was felt the most in Kwarasan sub-district which inundated 800 people, followed by Madegondo sub-district with 385 people, the Kadokan sub-district with 320 people, and Telukan sub-district with 30 people (BPBD Sukoharjo, 2022). The height of the flood in the Kwarasan sub-district reaches 50-170 cm and the flood recedes between 1-3 days. The Head of Kwarasan said that several hamlets in the Kwarasan sub-district that were flooded were hamlets 4, 5 and 6 because they were located on the banks of the Wingko and Kembang Rivers and were low-lying areas so the impact of flooding in these areas was felt by the community. Actually, the local government of Kwarasan with residents has made efforts to reduce the risk of flooding by building river slopes and embankments

around the river but these efforts have not been able to overcome flooding.

Based on data from the Kwarasan sub-district there were several impacts resulting from the flood disaster in February 2023 including many residents who had to flee to relatives' homes and in the Wisma Boga edifice, some residents experienced health problems such as diarrhea and skin problems like itching, temporarily stopped school activities, disrupted residents' economic activities, residents were unable to sell, some ware was damaged due to being submerged in floods so that ware could no longer be sold, unable to carry out normal activities due to floods, damaged household appliances such as refrigerators, washing machines, bedstead, radios, and guest chairs, several residents' vehicles such as motorbikes being submerged.

One of the factors causing disaster losses is related to knowledge and attitude of preparedness, this is evidenced by Yatnikasari's (2020) research which proves that knowledge and attitudes are parameters with the highest index values indicating that the level of preparedness of household heads in facing floods is largely determined by their knowledge and attitude of preparedness, so it doesn't cause major losses to the household such as

damage to the house, household furniture, and the surrounding environment.

Preparedness knowledge is a major factor and is the key to dealing with disasters (Nova, 2022). If the community's knowledge is good, it can create a generation that has good disaster preparedness (Pahleviannur, 2019). But if knowledge is lacking, then preparedness may be ill-prepared in the face of disaster. This is evidenced by Hildayanto's (2020) research which proves that the knowledge of the community in the Mangunharjo Sub-District regarding flood disaster preparedness is low, with 63 out of 99 respondents. In terms of flood prevention, knowledge is needed which is the main support for the community in taking action. Knowledge of flood disaster preparedness is based on several indicators which include knowledge related to the understanding of natural disasters, understanding of flood disasters, the impacts caused by floods, the potential caused by flood disasters, the purpose of flood preparedness, food preparation, steps to avoid the risk of flood disasters (Istiqomah, 2023). Knowledge of disaster preparedness is important to teach because through knowledge it directly forms an attitude toward disaster preparedness (Sari et al., 2019).

An attitude of preparedness refers to the readiness to react constructively by minimizing the negative consequences of the impact of a disaster (Sandajaya, 2020). If attitudes are lacking, it can make the community's preparedness in dealing with floods less. This is evidenced by Hildayanto's (2020) research which proves that the attitude of community preparedness in dealing with flood disasters in the Mangunharjo Subdistrict is low with a percentage of 53.5%, this is due to a lack of knowledge about flood disasters it can affect the way people behave in dealing with the disaster. The attitude of flood disaster preparedness is based on indicators of flood preparedness efforts, both before the flood arrives, during the flood, and after the flood occurs (Iwan, 2019).

When dealing with a disaster, the knowledge and attitude of preparedness are important things that must be possessed, these things cannot be separated because they are interconnected, with the knowledge of disaster preparedness, will affect a person's attitude when a disaster occurs. An attitude based on knowledge can be used in the long term to reduce the impact of losses from the disaster (Hildayanto, 2020). Besides that, attitude is also a determining factor for behavior because attitude is related to

perception, personality, and motivation. Attitude is defined as mental preparedness, which is learned and organized through experience, and has a certain influence on a person's response to other people, objects, and situations related to him (Huma, 2022).

People who live in flood-prone areas, especially around rivers, are very vulnerable to flooding, they are always involved in efforts to save lives and property. The head of the family is someone who is expected to have the preparedness ability to overcome disasters. The form of his preparedness ability is to have knowledge and attitude towards disasters. This knowledge and attitude are very important because the head of the family has a role in conveying information to his family members, making quick decisions that can affect his family members and also the head of the family as a source of social support for his family. As a result of his influence, all his words, behavior, and actions will be used as a role model by his family in dealing with disasters (Isnaeni, 2022).

Based on the description above, the researcher is interested to do this research with the aim of to know about the description of the knowledge and attitude of flood disaster preparedness of residents in Kwarasan, Grogol, Sukoharjo.

2. METHODS

The type of research used is descriptive quantitative with survey methods. The research location was carried out in Kwarasan Sub-District, Grogol District, Sukoharjo City. The time of this research began in December 2022-June 2023. The population used in this research was obtained from the last flood data in February 2023, which is the family head at Hamlets 4, 5, and 6 of Kwarasan Sub-District as many as 364 family heads. The sample in this study after being calculated using the Slovin formula is 78 respondents. The inclusion criteria in this research were the previously flood-affected head of both male or female families and the family head whose house is on the Wingko River and Kembang River. The exclusion criteria in this research were family heads who were out of town and family heads who could not communicate. The sampling technique used purposive sampling and stratified random sampling.

The variables in this research are knowledge and attitude toward flood disaster preparedness. The instrument in this research is using a questionnaire of knowledge and attitude toward flood disaster preparedness. The researcher did not test the validity and reliability because adopted the preparedness knowledge

questionnaire from Istiqomah's research (2023) and the preparedness attitudes questionnaire from Iwan's research (2019). The results of the validity test of the preparedness knowledge questionnaire were declared valid with a value between 0.367-0.853. The results of the validity test of the preparedness attitude questionnaire are valid because the r count is greater than r table (0.3061). The results of the reliability test of the preparedness knowledge questionnaire obtained a Cronbach Alpha value of 0.850. This indicated that the questionnaire was declared reliable. The results of the reliability test of the preparedness attitude questionnaire obtained a value of 0.70. This indicated that the questionnaire was declared reliable. Data collection in this research used primary data obtained from interviews with the Head of the Sukoharjo BPBD, the Head of Kwarasan Sub-District, the Head of Hamlets 4, 5 and 6, the results of distributing questionnaires to heads of families regarding knowledge and attitudes towards flood disaster preparedness. Secondary data is obtained from internet sites, journals, or from a reference that is the same as that being researched by the researcher. This research uses univariate analysis in the form of descriptive percentages. This research have

an official permit number 01742/C.5-PN/MHN/2023.

3. RESULTS

Table 1. Distribution of Knowledge about flood disaster preparedness for residents in Kwarasan, Grogol, Sukoharjo.

| Variable | Category | Frequency | Percent |
|---|------------|-----------|---------|
| Knowledge about flood disaster preparedness | Good | 76 | 97,4 % |
| | Sufficient | 2 | 2,6 % |
| | Less | 0 | 0 % |
| Total | | 78 | 100 % |

Based on Table 1, the results show that out of 78 respondents in Kwarasan Sub-District, Grogol District, Sukoharjo City, regarding the description of

The results of this research are presented in the form of univariate analysis which is used to analyze the variables of knowledge and attitude towards flood disaster preparedness.

knowledge about flood disaster preparedness, 76 (97.4%) respondents were in a good category and 2 (2.6%) respondents were in the sufficient category.

Table 2. Distribution of attitude of flood disaster preparedness for residents in Kwarasan, Grogol, Sukoharjo.

| Variable | Category | Frequency | Percent |
|---|------------|-----------|---------|
| Attitude of flood disaster preparedness | Good | 61 | 78,2 % |
| | Sufficient | 17 | 21,8 % |
| | Less | 0 | 0 % |
| Total | | 78 | 100 % |

Based on Table 2, the results show that out of 78 respondents in Kwarasan Sub-District, Grogol District, Sukoharjo City, regarding the description of the attitude of flood disaster preparedness, 61 (78.2%) respondents were in a good category and 17 (21.8%) respondents in the sufficient category.

4. DISCUSSIONS

Knowledge about flood disaster preparedness for residents in Kwarasan

Sub-District, Grogol District, Sukoharjo City.

Based on the results of research regarding knowledge about flood disaster preparedness of residents in Kwarasan Sub-District, Grogol District, Sukoharjo City, the majority in a good category with a percentage of 97.4% and knowledge about flood disaster preparedness in the sufficient category with a percentage of 2.6%. The results of this research are evidenced by Rahmawati's (2022) research

which proves that the majority of residents in the Koripan Sub-District, Polanharjo District, Klaten Regency have good knowledge of 85 respondents (95.5%). The results of this research are also evidenced by Kumambouw et al. (2023) research which proves that the percentage level of preparedness knowledge of the people of the Bukit Duri Sub-District, South Jakarta, is 84.7% and falls into the high category. Besides that, the results of this research are also evidenced by Pandi et al. (2022) which proves that the heads of families in Hamlets 6, Jodipan Sub-district, Malang City have good knowledge in flash flood disaster preparedness as much as 52.8%.

Knowledge of Preparedness can foster understanding, awareness, and increased knowledge about disasters located in natural disaster-prone areas in hopes of creating systematic, integrated, and coordinated management of natural disasters (Nova, 2022). Knowledge of disaster preparedness is essential to reduce the risk posed by disasters (Syaifudin, 2018). Knowledge of preparedness is essential for the head of the family to have as a leader in household life and is responsible for conveying information to his family members, and making decisions to act based on the essential truth, the truth that will benefit all members of the household (Setyaningrum, 2018).

The frequent occurrence of floods in the Kwarasan Sub-District has various impacts on its residents. Various impacts of large losses are felt by residents every year, especially the biggest impact in 2007 which caused huge losses of up to billions of rupiah, but after learning about this preparedness that residents can minimize disaster risks as evidenced by the flood events in 2022 and 2023 which didn't cause much loss of up to tens or even hundreds of millions. The impact of the flood disaster is still felt by respondents, and it's evident by the existence of good knowledge of preparedness when a flood occurs, the impact can be minimized because the respondents already know about preparedness when a flood comes. This is evidenced by Wirmando et al. (2022) research which proves that there has been an increase in the knowledge and preparedness of the community of Hamlets 10, Batua Sub-District, Manggala District, Makassar in the good category so that the community can minimize the impact and losses caused by the flood disaster.

According to the researchers, knowledge about preparedness was in a good category because respondents had or often received information obtained from education and training on disaster preparedness, especially floods held by BPBD Sukoharjo which was attended by

Kwarasan Sub-District officials, Head of Hamlets, Neighbourhood Head, and disaster volunteers from residents. From the counseling and training, the Head of Hamlets, Neighbourhood Head, and volunteers are tasked with conveying the information and knowledge they have obtained to residents so that the knowledge of respondents' preparedness in dealing with flood disasters is increasing. This is evidenced by Buston et al. (2021) research which proves that there is an effect of preparedness training on knowledge of preparedness in family disaster management on the coast of the city of Bengkulu.

Another factor according to researchers that causes knowledge about flood disaster preparedness is largely in the good category because this flood disaster is the most common disaster that occurs annually in their area, which has become a routine habit when the rainy season comes with very high intensity flooding will occur. the causes of floods and their countermeasures are also known by the respondents so the respondents' knowledge about flood disaster preparedness is in a good category. This is evidenced by Gustini et al. (2021) research which proves that knowledge about flood disaster preparedness for the community of Danau Kerinci Barat District, Kerinci

Regency is in the high category because most of the respondents already consider that flood disasters have become a routine habit that occurs during the rainy season, this habit has been going on for quite a long time so they consider floods to be a common occurrence.

Besides that, knowledge about preparedness in the good category from respondents is also influenced by experience. The experience they have over the years dealing with floods makes them know and understand more about flood disaster preparedness. This is evidenced by Kumambouw et al. (2023) research which proves that a high level of knowledge of 84.7% was obtained from the experience of respondents who have lived in Bukit Duri for a long time. From this experience, respondents are used to dealing with floods and of course, know what to do if a flood occurs. Therefore, experience greatly influences the level of knowledge about flood disaster preparedness from respondents, so that knowledge is in the high category.

Attitude of flood disaster preparedness for residents in Kwarasan Sub-District, Grogol District, Sukoharjo City.

Based on the results of research regarding the attitude of flood disaster preparedness toward residents in

Kwarasan Sub-District, Grogol District, Sukoharjo City, the majority in a good category with a percentage of 78.2% and attitude of flood disaster preparedness in the sufficient category with a percentage of 21,8%. The results of this research are evidenced by Noorratri's (2021) research which proves that of the 87 heads of families in the Pucang Sawit Sub-District, 98.9% of the people's attitudes are positive. The results of this research are also evidenced by Rahmawati's (2022) research which proves that the attitude of residents' preparedness in dealing with flood disasters in Koripan Sub-District, Polanharjo District, Klaten Regency, the majority were in the positive category, with 88 respondents (98.9%). Besides that, the results of this research are also evidenced by Istiqomah's (2023) which proves that the attitude of the people preparedness of Bumi Sub-District, Laweyan District showed that the majority had a positive attitude with a percentage of 98.6%.

An attitude of preparedness makes residents more concerned about their territory. This attitude of preparedness refers to readiness to react constructively by minimizing the negative consequences of the impact of a disaster (Sandajaya, 2020). The attitude of Preparedness is essential for family heads, because the family heads has a role in making quick

decisions that can affect household members. As a result of his influence, all his words, behavior, and actions will be used as a role model by his family in dealing with disasters (Isnaeni, 2022).

According to researchers, the majority of Attitude of flood disaster preparedness are in a good category because respondents often or have received preparedness training and information about disaster management provided by BPBD, Kwarasan Sub-District officials, or disaster volunteers in the Kwarasan Sub-District. This is evidenced by Setiawati et al. (2020) research which proves that nurses who worked at the Rumbai, Karya Wanita, Umban Sari, Rumbai Bukit, and Muara Fajar Health Centers who had attended disaster training had a good attitude of 75.0%. This is because disaster training can instill responsiveness and alertness in respondents in dealing with flood disasters to minimize the impact of a more severe disaster.

According to the researchers, the good attitude of respondents' preparedness was also influenced by the knowledge factor in dealing with flood disasters that enable them to anticipate disaster properly. Knowledge in this case is the respondent's knowledge that they get from attending education and their experiences dealing with floods in the Kwarasan Sub-District,

so with this provision a good attitude can be created. This is evidenced by Artini et al. (2022) research which proves that the attitude of preparedness in the medical center Mojowarno relating disasters in the positive category (91%), where 19 respondents (41.3%) have a level of good knowledge with a positive attitude.

Besides that, the attitude of preparedness in a good category is influenced by the experience of the respondents. Experience in this case is the respondent's experience of dealing with floods that occurred while the respondent was living in the Kwarasan Sub-District. From this experience, respondents are used to dealing with floods and of course understand what to do when a flood occurs. This is evidenced by Pandi et al. (2022) research which proves that the preparedness attitude of the family head at Hamlets 6 Jodipan Sub-district, Malang City in this research was influenced by the experience factor because all the people who were the research respondents were natives who had experienced a flood disaster before, so that the respondents already had experience with disasters and could influence preparedness for flood disasters.

Experience can also make the attitude of preparedness better because of improvements or evaluations to carry out

preparedness better and reduce losses, risks and impacts from flood disasters. The impact of the floods in the Kwarasan Sub-District is still being felt, but with a good attitude of preparedness from the residents so the impact caused by the floods can be minimized gradually. For example, in 2007, floods paralyzed all the activities of residents in Grogol District, including the Kwarasan Village, which caused huge losses estimated at billions of rupiah. The 2016 flood also had a major impact on this area which included 508 houses of affected residents, material losses were estimated at hundreds of millions of rupiah. With experience and a good attitude of preparedness from residents, the impact of flooding can be minimized, this is seen from floods in 2022 and 2023, which are currently perceived to have been less severe in the previous years and the nominal losses doesn't reach tens or even hundreds of millions.

Experience can also make the attitude of preparedness better because of improvements or evaluations to carry out preparedness better and reduce losses, risks, and impacts from flood disasters. The impact of the floods in the Kwarasan Sub-District is still being felt, but with a good attitude of preparedness from the residents so the impact caused by the floods can be minimized gradually. For example, in 2007,

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A good attitude of preparedness in respondents becomes a powerful motivation in making efforts to reduce the risk (impact) caused by floods in the family. This is evidenced by Hayati's (2022) research which proves that the attitude of community preparedness is classified as "very good" with a percentage of 86.79%, which means that there has been an increase in the attitude of preparedness in the long term it is expected to be able to increase the value of community capacity to be even better so that disaster risk reduction can be carried out as much as possible in Hulu Sungai Selatan Regency.

5. CONCLUSION

The Conclusion that can be drawn from this research is that the description of the knowledge about flood disaster preparedness for residents in Kwarasan, Grogol, Sukoharjo is mostly in the good category and the description of the attitude of flood disaster preparedness for residents in Kwarasan, Grogol, Sukoharjo is mostly in the good category too. The advice for residents in the Kwarasan sub-district is always increase their knowledge and attitude of disaster preparedness, especially flood disasters by always updating knowledge through various sources such as social media, attending education, and training related to disaster preparedness so that in this way the knowledge and attitude of residents preparedness can continue to improve well and can apply it when a flood disaster occurs so that the impact of a flood disaster can be minimized. The advice for nursing students is that the results of this research can be used as information material to enhance the role of nursing students in various disaster management activities to minimize the impact caused by flood disasters. The advice for further researchers can carry out research using other theoretical and technical approaches and can test the effect of variables to find out how powerful the effect on flood disaster preparedness.

6. Acknowledgement

The researchers were grateful to all in attendance and participated in the research, including the family heads at Hamlets 4, 5, and 6 in the Kwarasan Sub-District, Grogol District, Sukoharjo City who volunteered to cooperate as respondents, so this research can be carried out properly.

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