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KNOWLEDGE AND COMMUNITY PREPAREDNESS FOR FLOOD DISASTER IN SEMPAJA TIMUR VILLAGE, SAMARINDA CITY

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ABSTRACT

Indonesia is a country prone to flooding because it has large rivers and is located between two largest oceans in the world, the Indian Ocean and the Pacific Ocean. The country is also one of the areas prone to natural hazards and natural disasters. Community's knowledge greatly influences the community's concern and attitude to be alert and ready for disaster. Objective: This study aims to find out the correlation between knowledge and community preparedness for flood disaster in Sempaja Timur Village, Samarinda City. Method: This study uses a cross-sectional approach with a total sample of 155 households in in the East Sempaja Village, Samarinda City, selected through an technique was multistage random sampling. Data were analysed in Somer's test. Results: Respondents with a level of knowledge in the moderate category as much as 63.9%. Respondents who have a level of preparedness for floods with a very prepared category are 98.7%. Conclusion: There was a significant correlation between knowledge and community preparedness for flood disaster in Sempaja Timur Village, Samarinda City (p = 0,00).

Kata Kunci: flood; knowledge; preparedness

INTRODUCTION

Indonesia is a country that is quite prone to flooding, this is because our country has quite large rivers, located between the world's great oceans, namely the Indian and Pacific Oceans. Which has placed it as one of the areas that are prone to natural hazards and *natural disasters* (Anzolin et al., 2023; Bayazıt et al., 2021; Blöschl et al., 2019) The pattern of community behavior in dealing with disasters is influenced by three main factors including nature, population development, and technology. Different natural conditions determine community preparedness for various disasters (Bayazıt et al., 2021; Bola et al., 2022; Dutta & Sinha, 2023). This can be exemplified by the readiness of residents in mountainous areas who receive more education regarding preparedness for landslides, so that residents in the highlands are better prepared for these conditions than other disasters. like a flood. Meanwhile, residents in lowland areas are more prepared for disasters that may occur in their flat conditions, such as floods (Fleischmann et al., 2020; Forero-Ortiz et al., 2020; Fothergill, 2021).

Floods are where there is some amount of water that is on low or dry land. From very heavy rains, sometimes overflowing. This can happen because the amount of water in rivers, lakes and other water areas has increased which has exceeded its normal capacity resulting in insufficient capacity to store rainwater so that the reservoirs overflow (Gu et al., 2019; Hadlos et al., 2022; Höllermann et al., 2022). Flooding is a seasonal threat that occurs anytime and almost any time, if the overflowing water capacity of the canal can inundate the surrounding area. Indonesia itself has very high rainfall, which ranges from 2000-3000 mm / year, so that when it rains with heavy rainfall, flooding easily occurs during the rainy season, which is between October and January. Factors causing flooding can be classified into two, namely natural and man-made causes of flooding (Huang & Shen, 2019; Kaur et al., 2022; Kim et al., 2023). Floods caused by nature are

influenced by rainfall, erosion, physiography and sedimentation, the ability of rivers to hold water, drainage capabilities and the influence of tides (Komolafe et al., 2020; Mahon & Rifino, 2024; Mhd Noor et al., 2022). Whereas the consequences of flooding caused by human activities have caused environmental changes such as changes in river flow, community settlements around the banks, damage to flood control buildings, damage to land drainage, damage to forests (natural vegetation), and inappropriate flood control system planning (Mohan, 2023; Mondino et al., 2020; Mutch, 2023). The impact of the floods felt by the people of Samarinda city included access to the airport being completely paralyzed, congestion caused by flood inundation, triggering vehicles to break down, especially two-wheeled vehicles (Bola et al., 2022; Nakai & Nakano, 2023; Nardi et al., 2022).

The knowledge possessed by the community really greatly influences the awareness and attitude of the community to be ready and prepared to predict if a disaster will occur, most importantly for people who live in areas prone to natural disasters (Mhd Noor et al., 2022; Phillips et al., 2022; Priyanti et al., 2019; Raheem et al., 2023) . The community's level of knowledge about floods showed that 63.6% of all respondents still had a low level of knowledge. Meanwhile, in terms of the level of preparedness for flood disasters, based on a previous study conducted by Agus Hildayanto, it showed that 53.5% of all respondents had a low level of preparedness (Šakić Trogrlić et al., 2022; Samui, 2018; Shah et al., 2020; Syarif et al., 2022). Based on a preliminary study conducted by researchers in the East Sempaja sub-district, Samarinda City on December 16, 2021. The results of the researcher's interviews with 5 community members were obtained. From the 5 members of the preliminary study, it was found that 4 people know what flooding is, 3 people know about the dangers of flooding, 1 person knows how to deal with floods, 3 people know the signs of a flood, 4 people know how to live a healthy life after the flood, and 2 people in the community know the adaptation if a flood disaster occurs.

METHOD

This study uses a type of quantitative research. The research design uses *descriptive analytic.* By using *cross sectional method.* This research was conducted in the East Sempaja Village, Samarinda City. This research was conducted on April 4-10 2022 in the East Sempaja Village, Samarinda City. In this study, the population was the people of the East Sempaja Village, Samarinda City, which totaled 155 households. The inclusion criteria: (1) Willing to be a respondent, (2) Community of Sempaja Timur Village, Samarinda City, (3) People who cannot read, write and Indonesian. While the exclusion criteria: (1) People who are sick. In this study the sampling technique used was *cluster* sampling. The instrument in this research uses an open questionnaire, namely knowledge using the Guttman scale and preparedness using the Liket scale. There are two analyzes used in this study, namely univariate analysis and bivariate analysis. Univariate analysis in this study is to describe the characteristics of the respondents. In this study, the type of statistical test used was *Somer's test* to measure the relationship between two variables with ordinal scales that are symmetrical (influence each other). The hypothesis in this study is said to be related if the p value is > 0.05.

RESULT AND DISCUSSION

Table 1, it can be seen that the majority of respondents are female, namely 60.6%. Based on age, it can be seen that the majority of respondents aged 26-35 years were 31%. Based on education, it

can be seen that the majority of respondents with the last education were SMA/SMK as much as 44.5%.

Table 1.
Frequency distribution of the characteristics of respondents based on gender, age, and education (n=155)

Characteristics	Category	f	%
Gender	Man	58	37.4
	Woman	97	62.6
Age	8 - 12 Years	1	0.6
	12-16 Years	6	3.9
	17-25 Years	43	27 , 7
	26 - 35 Years	48	31.0
	36 - 45 Years	26	16 , 8
	46 - 55 Years	24	15 , 5
	56 - 65 Years	7	4.5
Education	Elementary School	36	23.2
	Junior High School	18	11.6
	Senior High School	69	44.5
	College	32	20 , 6

Table 2.
frequency characteristics based on knowledge and preparedness (n=155)

Characteristics	Category	f	%
Knowledge	Tall	56	36.1
	Currently	99	63.9
	Low	0	0
Preparedness	Very ready	153	98.7
	Ready	2	1.3
	Almost Ready	0	0
	Less Ready	0	0

Table 2 shows that respondents who have a high level of knowledge are 36.1%; respondents with a level of knowledge in the moderate category as much as 63.9%; and no respondents who have a level of knowledge with a low category. Table 2 shows that respondents who have a level of preparedness for floods with a very prepared category are 98.7% and those who have a level of preparedness for floods with a ready category are 1.3%. There were no respondents who had a level of preparedness for flood disasters in the almost ready and less prepared categories.

Table 3.
Somer's test measures the relationship between the two variables (n=155)

Variable	Category	Preparedness				p value
		Very ready		Ready		
		f	%	f	%	
Knowledge	Tall	55	35.5	1	0.6	0.000
	Currently	98	63.2	1	0.6	

Table 3, it is known that the significance value is 0.00 <0.05, which means that there is a significant relationship between knowledge and community preparedness for flood disasters in Sempaja Timur Village, Samarinda City.

The results of the study indicate that there is a significant relationship between knowledge and community preparedness for floods in the East Sempaja Village, Samarinda City. The results showed that the majority of respondents were female, namely 60.6%; the majority of respondents aged 26-35 years aged 8 as much as 31%; and the majority of respondents with the last education from Senior High School were 44.5%. The results of the study show that people who have a high level of knowledge are 36.1%; people with a level of knowledge in the moderate category as much as 63.9%; and there are no people who have a low level of knowledge. The results showed that people who had a level of preparedness for floods with a very prepared category were 98.7% and those who had a level of preparedness for floods with a ready category were 1.3%. There is no community that has a level of preparedness for flood disasters with almost ready and less prepared categories.

Flood is one of the most frequent hydrological disasters in Indonesia. Floods not only damage the environment but also the economy and society. Major floods that occur are not only caused by natural movements (natural phenomena) but disasters can occur due to human behavior in managing natural resources. The potential for human behavior is not only limited to forest exploitation or mining and land conversion (agrarian to industrial), water management, but also includes the behavior of managing household waste (Kaur et al., 2022; Kim et al., 2023; Komolafe et al., 2020; Tas & Cakir, 2022; Tyler & Sadiq, 2020; Vanelli & Kobiyama, 2021). Knowledge is the result of discoveries originating from humans, or results that someone knows about something through the senses that someone has, such as (eyes, nose, ears, and so on). So from that by itself in the discovery of this knowledge as a result someone can form that knowledge and is very much determined by the power of attention and perception of reality.

Most of a person's knowledge is obtained through the sense of hearing (ears) and the sense of sight (eyes). A person's knowledge of phenomena has different strengths or levels, preparedness is an action in the form of active protection that must be carried out when before a disaster occurs and during a disaster (Shah et al., 2020; Veloso et al., 2022; Wallis et al., 2022; Wang et al., 2019). According to Law Number 24 of 2007, preparedness is a series of activities or activities carried out during a disaster using fast steps. Preparedness is basically an activity that can be done before a disaster occurs or to respond quickly to conditions/situations during a disaster and after a disaster. This method is needed by the community so that they can anticipate the possibility of a disaster so that there are no casualties, loss of objects and property, and changes in the structure of society (Blöschl et al., 2019; Mhd Noor et al., 2022; Mutch, 2023; Nakai & Nakano, 2023; Priyanti et al., 2019). The preparedness scheme is a disaster management plan that can be carried out with the pre-disaster stage, that is, if the situation occurs there is an identified potential disaster. The threat of an impending disaster is caused by a lack of community preparedness and public vigilance in the face of an impending disaster (Raheem et al., 2023; Šakić Trogrlić et al., 2022; Samui, 2018; Veloso et al., 2022; Wallis et al., 2022; Wang et al., 2019).

The legal basis for preparedness for people in Indonesia is included in Law number 24 of 2007 article 44, that in disaster management when conditions in an area have the potential to include disaster preparedness, early warning and disaster mitigation. Preparedness which is in Law number 24 of 2007 namely the existence of fast and responsive efforts in dealing with disaster situations. Recognizing Indonesian areas that have a very high potential for disasters so that the need for

preparedness is mandatory for the community. Knowledge, namely the background or basis of one's actions and awareness, knowledge of a person needs to determine the taking of management actions against a disaster (Dutta & Sinha, 2023; Mahon & Rifino, 2024; Mohan, 2023; Mondino et al., 2020; Shah et al., 2020). When planning preparedness, it is mandatory to know the types of threats that will occur in the area, for example, earthquakes and environmental threats. In addition, it is also necessary to know the characteristics of the threat such as the cause, the strength of the threat, the speed at which the threat occurs and the extent of the threat (Syarif et al., 2022; Tas & Cakir, 2022; Tyler & Sadiq, 2020; Veloso et al., 2022; Wallis et al., 2022).

CONCLUSION

The characteristics of the respondents are that the majority of respondents are female; aged 26-35 years; and last educated is Senior High School The majority of people have a level of knowledge in the medium category. The majority of people have a level of preparedness for flood disasters with the very prepared category. There is a significant relationship between knowledge and community preparedness for floods in the East Sempaja Village, Samarinda City.

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