



Original Research

The Relation Between Knowledge and Experience of Facing Flood Toward The Anxiety Level of Head Families in The Flood-Prone Areas

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Abstract

Families who reside in the surrounding flood-prone areas require flood preparedness to undertake preparedness so that family members do not create new problems such as anxiety. This study aims to determine the relationship of knowledge with experience in dealing with the level of anxiety of household head anxiety. This research is a cross-sectional descriptive correlation study and the sample used in this study is 225 households. The results of the study using the Anova test showed that the knowledge and experience of dealing with floods were related to the anxiety of household heads in disaster-prone areas ($p = 0.001$; $\alpha = 0.05$). Multivariate of results were found that the most related factor was an experience. This study recommends that the family knowledge needs to be increased through simulation training to deal with floods by involving the Regional Management Agency, the local government and the Public Health Center

INTRODUCTION

Flood disasters can cause adverse effects in various areas of community life that can be in the form of material losses or moral losses. This often causes the rise of mental conditions because of the loss of property and families due to the disaster.¹

The flood that occurred in 2014 was the biggest flood in the Asian region with the widest area coverage including 52 events throughout various Asian countries that led to the death of as many as 3559 people. The event should be taken seriously so that it requires special attention in the form of anticipatory efforts or activities so it will not

cause bad impacts on people's lives in the future.

Shown that three respondents residing along the riverbank experienced anxiety and fear of the possibility of having a greater flood. They also feared if the dike cannot contain the water, it somehow threatened them, because if the dike falls their houses will be perished.² This shows that people who live around disaster-prone areas can experience anxiety.

Anxiety is a condition that involves a person's physical, self-perception and relationship with others. It is also one of the reactions that can strengthen individuals to

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react upon an action or step when facing threats.³ When people in flood-prone areas feel threatened, the efforts should be made to reduce these impacts through preparedness activities.

Preparedness is an activity that carried out strategically in an effort to anticipate disasters through effective planning and through active steps from the community and all elements in the government and is a priority disaster phase in disaster management. Preparedness that needs to be done before a disaster comes is based on factors including prior experience, knowledge, emergency planning and resource mobilization.⁴ So that the husband as ahead of the family can make preparedness as the person responsible for providing protection and a sense of security to his family.

The results of a preliminary study found that the disaster-resilient village that formed by the government in Lempake Samarinda City was expected to be able to assist the community in dealing with floods by trying to make the necessary preparedness in dealing with floods. However, the factors that underlie the preparedness itself were experience, knowledge, resource mobilization, emergency planning and anxiety felt by household heads who live in disaster-prone areas, were not clearly illustrated.

Therefore, researchers are interested in finding out more about the picture of preparedness factors that were owned by the head of the family and their relation to the level of anxiety in dealing with flooding.

METHODS

The design used in this study was descriptive correlational. The number of samples in this study was 225 people obtained through total sampling. Data retrieval using a questionnaire, where respondents are given an explanation first about the research conducted, then given

the time and freedom to make decisions about their involvement in research. Data collection questionnaire for variables used the Community Disaster Preparedness Index for knowledge and experience factors consisting based on the 23 question items given. As for anxiety variables, the Hamilton Anxiety Rating Scale instrument consists of 14 statement items.

Researchers used the ethical principles of research that include self-determination, confidentiality, and privacy, justice, benefit, and nonmaleficence. Researchers provided information/explanations of the research first, then provide freedom to prospective respondents to the decision of their involvement in research activities. Researchers also maintained the confidentiality of respondents in all aspects of the identity and content of the questionnaire. This study upheld the principle of justice, all respondents were treated equally. In addition, this research also prioritized the goodness and interests of respondents.

In the next step, the data were processed using univariate, bivariate and multivariate. The univariate analysis looks at the characteristics, knowledge, and experience as well as the anxiety of household heads. The bivariate analysis looks at the relationship between knowledge and experience in dealing with floods with the anxiety of family heads. Researchers used the Anova statistical test to determine the relationship between knowledge and experience with family head anxiety. Further analysis by multivariate used a multiple logistic regression test to see which factors are most associated with household head anxiety.

RESULTS

The results showed that the average head of the household was 41.32 years old with an age range of 26-68 years. The sex of the head of the family was dominated by men as much as 91.1%. The education of the head of the family was mostly 40.8% high school.

and the occupation of the largest head of the family was Private / Civil Servants as much as 42.2%. While the average household head income was below <Rp.2,256,000, of which was 53.8%.

Table 1 shows that the average for knowledge of the preparedness of household heads is 8.28 with a standard deviation of 2.39 and it is believed that 95% of the household's preparedness knowledge in dealing with floods ranges from 7.96 to 8.59. The average factor of family head preparedness experience was 6.98 with a standard deviation of 2.01 and it was believed that 95% of family head preparedness experience is in the range of 6.71-7.24.

Regarding anxiety level shown that the majority of family heads experienced mild anxiety which is 47.6% and the least number of family heads had moderate anxiety which was 23.1%.

The results of the bivariate analysis in table 1 show that there was a relationship between knowledge and experience in dealing with floods with the level of anxiety of household heads in flood-prone areas (p=0,001; $\alpha = 0,005$). And with the post hoc test showed a significant difference which was knowledge and experience in dealing with disasters with mild anxiety, moderate and severe head of household.

Table 1.

Distribution of Preparedness Factors and Anxiety Level of Family Head (n=225)

Indicators	Anxiety Level		
	Low N=107	Moderate N= 52	Severe N=66
	Mean	SD	95% CI
Knowledge	8,28	2,39	7,96 – 8,59
Experience	6,98	2,01	6,71 – 7,24

The results of multivariate modeling of the relationship of knowledge and experiences in dealing with flooding were related to the level of anxiety of household heads with age, gender, education, employment and income

as a confounding variable. The results of the final modeling analysis of table 2 show that there was a relationship with the knowledge and experience of dealing with floods with the level of anxiety of household heads. Experience is the most dominant factor due to the level of anxiety of family heads.

Table 2.

Head of family Analysis of Knowledge Relations and Experience with Anxiety (n=225)

Indicators	Anxiety	N	Mean	p
Knowledge	Low	107	9.80	0.000
	Mild	52	8.07	
	High	66	5.96	
Experience	Low	107	7.61	0.000
	Mild	52	8.23	
	High	66	4.96	

ANOVA One Way Test. Post Hoc Temhane analysis: Mild vs. moderate p <0.05; mild vs severe p <0.05; Moderate vs Weight p <0.05.

Table 3 also shows that the most related to the level of anxiety of household heads are experienced in dealing with flood disasters, where the OR obtained from the experience variable is 5.1 which means that the family head who has preparedness experience has a 5.1 chance of not having anxiety.

The findings in this study are a model of the formation of a disaster prepared village in an effort in the pre-incident phase which includes mitigation or prevention and preparedness to avoid potential disasters such as community and population preparedness in disaster or emergency situations and preparedness when an area is at risk and has the potential to be at risk disaster emergency situation. the experience of communities who have been given training on earthquakes, floods and landslides in Turkey to see disaster preparedness and management.⁵ A year later an evaluation was carried out on 400 people who had attended training one year before and 400 people who had not attended the training. The results show that there is a demographic social relationship, preparedness experience with cognitive, behavioral and psychological. The results of the regression analysis also showed that participants who had attended the training

had the ability and showed preparedness behavior.

Before a disaster occurs, efforts need to be made in the form of plans that are made together actively when facing a disaster, monitoring disaster risk events and making warnings that require attention from the community itself and the local government. These efforts can be increased by having experience in managing disaster preparedness in flood-prone areas. This is in line with research the other research on perceptions and preparedness in Bangladesh showing 75% of respondents who have had experience of earthquakes and tsunamis, have carried out activities to reduce the risk of natural disasters coming back.⁶ With the experience of disaster preparedness management in disaster-prone areas that have been carried out before, it will have an impact on reducing the symptoms or problems that cause anxiety. This is also supported by another research found that using a qualitative study of respondents in Japan who have an interest in disaster preparedness and have self-help groups to be able to manage anxiety when they are dealing with disasters.⁷ There are three themes associated with perceived anxiety, which are storing needed items, staying in a safe place and friends who can be invited to share to avoid anxiety. This shows the need for the closest support groups that the local community has to exchange ideas, information, and experiences in preparing so that local residents can jointly prepare properly when their regions face flooding by forming discussion groups.

Table 3.

Head of family Final Modeling Results of Preparedness Factors for Anxiety Rates

Indicators	B	p	OR	CI 95%
Knowledge	-7,689	0,003	0,000	0,000-0,070
Experience	8,415	0,000	5,125	3,968-5,130
Constant	19,048			

DISCUSSION

The results of this study found that the average head of family experienced mild anxiety was 47.6%. Anxiety occurs when individuals have difficulty facing problems, situations and life goals as a result of the stress of life faced, where the anxiety is influenced by predisposing and precipitation factors. Predisposing factors are factors that can affect a person experiencing stress which includes biological, psychological and socio-cultural. And precipitation factors that can challenge, threaten or prosecute individuals who need additional energy and can result in tension and stressor, which includes experiencing or witnessing trauma, threats to physical integrity and threats to the self system⁶. This is in line with research conducted on families who were in the pre-disaster storm, showing that stressors experienced are significantly related to anxiety symptoms, as well as the sources that cause damage and trauma are significantly related to anxiety symptoms⁷.

Experience in dealing with disasters can provide capabilities that have been done before so as to help prevent physical and psychological impacts of individuals when in a potentially flooded area such as symptoms of anxiety that can be felt and can evacuate quickly and act accordingly when the warning is given so that the impact occurring due to a disaster can be avoided. The results of other research found that experience has seven different influences on the preparedness process, namely: encouraging thinking and speaking; increase awareness and knowledge; helping individuals understand the consequences of a disaster; develop trust; develop preparedness; affect emotions and feelings, and encourage community interaction on disaster issues.⁸

Changes in preparedness behavior will have a positive impact, so there is a need for mutual coordination and communication between groups in the community so that

recommendations and first handling can be done immediately during an emergency which can reduce the level of anxiety. To predict preparedness, behavioral models usually use variables at the level of individual analysis, such as risk perception and assessment of the effectiveness of possible actions (response-efficacy). The other research on 629 Dutch citizens in The Hague in an area below sea level shows that the influence has a direct and indirect effect on the level of preparedness. Where more and more people participate in their communities the more they are prepared and the better use of social networks in facilitating citizens' preparedness for danger.⁹

Anxiety can have an impact on life and make individuals feel uncomfortable, but with anxiety can help give warnings to individuals about the coming danger so it is expected to help improve the ability of individuals to carry out activities to fight danger and threats.¹⁰ Most of the family heads in Lempake Village are facing flooding mostly experienced mild anxiety. According to the researchers' opinion, this could happen because the Lempake Kelurahan area is an area designated as a disaster-resilient region and already has disaster volunteers so that the possibility of local residents already have the preparation and capability in flood preparedness.

Anxiety can have an impact on life and make individuals feel uncomfortable, but the anxiety can help give warnings to individuals about the coming danger so it is expected to help improve the ability of individuals to carry out activities to fight danger and threats.¹¹ This thing is in line with the research of showing three respondents whose homes are along the river banks, feel anxiety and fear of greater flooding and fear that if the embankment cannot hold water, their residence will sink down.² This is also supported by research showing the results that 23% of respondents experience psychosocial stress when they are in a region prone to storms.¹²

Relation of knowledge with the level of anxiety of the Head of Family.

In this study, knowledge about flood preparedness was related to the level of anxiety of household heads in disaster-prone areas ($p = 0.001$; $\alpha = 0.05$). Further analysis showed that there were significant differences in knowledge with a mild, moderate and severe head of household anxiety. This is in line with research conducted showing that education is associated with increasing disaster preparedness capability and also showing that disaster-related training is very effective given to individuals with higher education.¹³ This is also in line with research using multi-regression analysis that the factors that most contribute to disaster preparedness are prior knowledge and experience of disasters.¹⁴ And research conducted which shows that the clarity of information received by disaster victims is very helpful in overcoming anxiety disorders and other physical complaints due to stressors experienced.

According to differences in knowledge between individuals can also be influenced by several external factors, namely environmental and socio-cultural and internal factors namely education, work, and age, where knowledge can be obtained through education or information obtained. Information is needed by individuals in threatening situations in order to be able to solve problems faced by both personal problems or family problems that can have a direct impact on daily life. Information provided and in accordance with the conditions and situations can suppress the emergence of new stressors because relevant information will have a positive impact on individuals. The results also showed that 23% of respondents answered no to the questions about temporary shelters that were known before the disaster. This shows that there is still a lack of information about where to evacuate if there's a flood coming.

The results showed that 63% of family heads had sufficient knowledge in dealing with floods, this was due to the lack of information about preparedness given directly to the community. Research conducted on people's perceptions about floods and preparedness in Japan, shown that some respondents who do not have enough knowledge about disaster preparedness have high concerns about the dangers posed by disasters that could arise suddenly and do not understand the preparations and efforts made in dealing with floods.¹⁵ This explained that when people did not have enough knowledge, then the individual can not make readiness in dealing with disasters and can cause anxiety. This is supported by research stated in his research in the Philippines that respondents' knowledge must be prepared before a disaster event to increase knowledge and ability to deal with disasters through training and seminars.¹⁶

Relation of Preparedness Experiences with the level of Anxiety of the Head of Family.

Relationship of Preparedness Experiences with Levels of Head of Household Anxiety In this study experience in dealing with floods was related to the level of head of household anxiety in disaster-prone areas ($p = 0.001$; $\alpha = 0.05$). Further analysis showed that there were significant differences in experience factors with a mild, moderate and severe head of household anxiety. Previous experience in dealing with floods made individuals able to respond to readiness when needed so that they can avoid the feeling of stress and anxiety when the area has the potential to experience disaster again. The experience of the head of the family in preparing preparedness was in the moderate category (69.8%), where there were 22% of respondents who did not prepare according to the management training that had been followed, because when faced with flooding previously only made preparations in accordance with the emergency at the time.

Previous experience can increase preparedness in facing disasters and provide information on disasters indirectly to individuals about the impact of disasters so that they can do better activities in carrying out disaster preparedness.^{16,17} In line with research conducted on floods and preparedness shows that the experience of having been prepared before had a high relationship with community preparedness in dealing with flooding.

The previous experience can provide capabilities that have been done previously so as to help prevent physical and psychological impacts of an individual when in a potentially flooded area such as anxiety symptoms that can be felt and can evacuate quickly and act accordingly when the warning is given so that the impact occurs due to disaster can be avoided.

Research conducted explained that the factor reported contributing to anxiety in daily life was a history of previous stress and natural disaster events of 22.8% which was a source of stress in life.¹⁸ Previous experience could increase preparedness in the face of natural disasters that can provide more information to individuals to do things that are likely to have an impact on preparedness to be better.¹⁹ There were several studies that indicate that previous experience provides a positive relationship to preparedness that can be influenced by the effectiveness of the preparedness and frequency of experience in dealing with disasters.²⁰

There are still family heads who experience severe anxiety because they are currently in a potentially catastrophic region, namely the condition of the house is located close to the source of the flood and during this research, there is often rain with high enough rainfall so that the head of the family experiences anxiety when a sudden flood occurs especially at night. Based on this, it is expected that the head of the family has good experience in preparedness by having an independent group to exchange

experiences so that each head of the family can have different preparedness experiences.

This is in accordance with explaining the previous experience in pre-disaster preparedness is related to the preparedness and stress behavior of respondents and respondents who have made preparedness in the face of a disaster can make individuals not easily experience anxiety which can have a detrimental impact.

CONCLUSION

This research found that most of the anxiety possessed by the head of the family was low anxiety, but there were still those who experienced moderate and severe anxiety. The results showed that knowledge and experience in dealing with flooding were related to the level of anxiety of household heads. Further analysis found that there was a significant difference between knowledge and experience in dealing with floods with a mild, moderate and severe head of household anxiety in flood-prone areas. With experience in dealing with flooding was the most related factor to the level of anxiety of household heads in flood-prone areas.

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CONFLICTS OF INTEREST

Neither of the authors has any conflicts of interest that would bias the findings presented here.

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