# Analysis of Health Workers' Preparedness Factors in Disaster Management at Disaster Prone Area Community Health Centers

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## **ABSTRACT**

Indonesia is one of the most disaster-prone countries in the world. Around 87% of Indonesia's territory is prone to natural disasters. Floods are the most common natural disasters that hit Indonesia. Throughout 2018-2020, South Kalimantan experienced 73 floods. This research aims to analyze the knowledge and attitudes of health workers in disaster management regarding flood disaster preparedness at the Mataraman Community Health Center, Banjar Regency. Quantitative research was conducted using an analytical observational research method with a cross-sectional design. The population in this study were health workers who worked at the Mataraman Community Health Center, Banjar Regency. This study used a sample of 33 people with purposive sampling technique. The instrument used was a questionnaire. Data analysis was carried out using the chi-square test with a confidence level of 95%. The results of statistical tests between the knowledge and attitudes of health workers in disaster management on disaster preparedness with p-values of 0.555 and 0.708. In conclusion, there is no relationship between the knowledge and attitudes of health workers in disaster management on flood disaster preparedness at the Mataraman Community Health Center.

Keywords: Flood, disaster management, attitude, knowledge

## INTRODUCTION

Indonesia is one of the most disaster-prone countries in the world. As much as 87% of Indonesia's territory is an area prone to natural disasters. The National Disaster Management Agency (BNPB) from Indonesia noted that disasters that occurred in Indonesia in the last three years continued to decline, namely 5003 disasters in 2021, 3515 disasters in 2022, and 2387 disasters in 2022. Disasters that occurred such as earthquakes earth, tsunamis, landslides, volcanic eruptions, droughts and floods.

Law Number 24 of 2007 states that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, either by natural factors and/or non-natural factors or human factors, resulting in human casualties, environmental damage, property loss. objects, and psychological impact. One of the natural disasters that has a major impact on health is flooding.<sup>3</sup>

Floods are the most common natural disasters that hit Indonesia. The National Disaster Management Agency (BNPB) recorded that there were 487 flood events from January 1 to April 19 2021. This number reached 42% of the 1.153 natural disasters that occurred in the country throughout 2021. Throughout 2018-2020, South Kalimantan experienced 73 flood times. The impact of the floods in South Kalimantan in 2020 resulted in 24 people dying, more than 100 thousand people being displaced, more than 600 thousand people being affected, resulting in damage and material loss worth IDR. 1.127 Trillion.4

Based on 2021 BNPB data, there are at least 11 regencies/cities in South Kalimantan that were affected by flooding, including Tapin Regency, Banjar, Banjar Baru City, Hulu Sungai Utara, Tabalong, Balangan, Hulu Sungai Tengah, Hulu Sungai Selatan, Barito Kuala, Tanah Laut, Banjarmasin City. At the time of the flood incident in early 2021, the Governor of

South Kalimantan issued an emergency response status for floods, landslides, tornadoes and tidal waves in South Kalimantan Province, which means that the disaster thatoccurred has threatened and disrupted the lives and livelihoods of a group of people/communities.<sup>4</sup>

Banjar Regency is one of 11 districts/cities affected by flooding in South Kalimantan Province. Part of the Banjar Regency area is lowland through which several rivers pass, with hydrographic conditions that are strongly influenced by rainfall. As a result, some areas are always inundated (29.93%) and others (0.58%) are periodically inundated. Based on these geographical conditions, Banjar Regency experiences flooding every year.

The United Nations International Strategy for Disaster Reduction (UNISDR) functions as the central point for coordinating disaster mitigation and coordinating synergy among disaster management system activities in the world.<sup>2</sup> UNISDR emphasizes that hospitals and other healthcare facilities are important assets for society in efforts to reduce the impact of disasters. The complexity of disaster problems requires careful structuring or planning in dealing with them, so that they can be implemented in a directed and integrated manner. Flood disaster preparedness requires health worker resources who have knowledge such as disaster knowledge, disaster management, disaster emergency response, to be better prepared and prepared to face and control health problems resulting from flood disasters. This knowledge will improve the ability of health workers to analyze to produce better attitudes. So it can be said that attitudes and knowledge have a relationship with flood disaster preparedness.5

Community Health Centers have an active role in increasing community involvement in disaster management efforts as the closest health service unit in the community.5 Community Health Centers are tasked with providing health services during disaster crises by carrying out various activities, such as 24hour emergency services, establishing 24-hour health posts around disaster locations, nutrition efforts, Maternal and Child Health (KIA) and refugee sanitation, mental health efforts and efforts referral health immediately after a disaster.7 Therefore, health workers community health centers have a role in preparing vulnerable groups in the acute phase of a disaster. Health workers need to equip themselves with good disaster management skills.

Disaster management is defined as a dynamic effort to carry out management

functions at all stages of disaster management (including prevention, mitigation, emergency response, and rehabilitation and reconstruction) by using all available potential to protect the greatest number of people, and trying to suppress the smallest number of victims resulting from natural disasters, as well as increasing the community's ability to overcome the threats that befall them. 6 This effort can be pursued through disaster management education, disaster emergency response training, planning and maintenance of facilities and infrastructure and building aid network routes.9 Previous research explains that weak professional competence has caused health workers to fail to play a role during disasters.8

Santi, I.P (2009) has mapped flood-prone zones in Banjar Regency, South Kalimantan using a Geographic Information System using the scoring method and obtained flood parameters to produce a map of flood-prone zones in Banjar Regency consisting of 5 classes, namely not vulnerable, potential, somewhat vulnerable, vulnerable, and very vulnerable. One area that is classified as very prone to flooding is Mataraman District. 10 Based on these problems, this research was conducted to analyze the preparedness of health workers in disaster management at the Mataraman health center which is classified as a very disaster-prone area. This proposed research can support the achievements of the PT's strategic plan and research road map, especially the focus on area 3 regarding disasters, namely the study of natural resource management, the environment and disasters.

## **METHOD**

Quantitative research was conducted using an analytical observational research method with a cross-sectional design. The population in this study were health workers who worked at the Mataraman Community Health Center, Banjar Regency. Calculating the sample size in this study, the minimum sample size was 30 people. The sampling technique used is a purposive sampling technique. This research excludes health workers who are nonfunctional and/or structural.

The instrument used in this research was a questionnaire. The variables in this study are the preparedness of health workers to face flood disasters, knowledge, attitudes and reliable emergency plans. An instrument is said to be reliable if it meets the standard Cronbach's Alpha coefficient  $(\alpha)$  which is greater than r table. Thus, if  $(\alpha)$  obtained is below or equal to r table, then it can be said that the questionnaire is not reliable or is considered not reliable enough in measuring

respondents' perceptions of the variables studied. Validity and reliability tests had previously been carried out at the Cempaka Center with 30 health workers.

# **RESULT AND DISCUSSION**

Univariate analysis

The frequency distribution of knowledge of health workers in disaster management at the Mataraman Community Health Center is as follows:

Table 1. Frequency Distribution of Health Workers' Knowledge in Disaster Management at Mataraman Community Health Center

Knowledge	Frequency	Percentage		
Poor	4	12,1%		
Good	29	87,9%		
Total	33	100		

Source: Primary Data, 2023

The results of the research above show that there are still 4 health workers (12.1%) who still have poor knowledge in disaster management at the Mataraman Community Based on questionnaire Health Center. analysis, this poor knowledge is partly because there are still health workers who believe that to avoid a high risk of flood disasters, people should still wait at home (75%). Apart from that, among health workers who have poor knowledge there are also those who think that electricity does not need to be turned off when floods occur (50%). Knowledge is the result of knowing and this occurs after people sense a particular object. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. Most human knowledge is obtained through the eyes and ears. Knowledge is everything that is known, but has not been compiled systematically and has not been tested for truth. The government needs people who have knowledge and preparedness in facing a disaster to reduce the risk of disasters.

Knowledge is the result of sensing, or the result of knowing someone towards objects through the senses possessions include the sense of sight, hearing, taste, smell, and touch. There is several factors that can influence a person's level of knowledge regarding disaster management, namely environmental, experience/information, sociocultural and age. Based on the results of previous research, age is also a factor influence

knowledge. Almost half of health workers are aged 21-30 years (43%), followed by age 31-40 years (35%) and >40 years with percentage 22%. From these results it can be seen that the age of health workers is the lowest few were aged >40 years (22%). Age Nor can we escape from experience which he has. Getting older or the more experience you have obtained by someone then the process of how think and think more mature. At the age of 30-45 years, Individuals will play a more active role in society and social life as well do more preparation for the sake of successful adaptation efforts towards old age.

Other influencing factors level of knowledge is gender. Type differences gender may shape perceptions different ones that influence it attitudes and knowledge are different too between men and women. Social approach to gender and literature from Gillgan (1982) in Carter (2011), men and women evaluated differently. Based on such approach, men are more inclined to study causes they will focus on success competitively and tend to ignoring the rules for success. Meanwhile, women are more oriented on task and less competitive. But in the existing reality, women tend to be more diligent, persistent and careful when given a task or do something. This is what causes it women have more levels better knowledge or cognition. The frequency distribution of attitudes of health workers in disaster management at the Mataraman Community Health Center is as follows:

Table 2. Frequency Distribution of Health Workers' Attitude in Disaster Management at Mataraman Community Health Center

Attitude	Frequency	Percentage
Negative	16	48,5%
Positive	17	51,5%
Total	33	100

Source: Primary Data, 2023

The results of the research above show that there are still 16 health workers (48.5%) who still have a negative attitude towards disaster management at the Mataraman Health Center. Community Based questionnaire analysis, this negative attitude is partly because there are still health workers who believe that cleaning sewers is carried out if a member of the community is affected by a disease such as dengue fever or malaria. Apart from that, when a flood occurs, there are health workers who believe that all family members should maintain body hygiene by bathing and brushing their teeth using flood water. Attitude is a reaction or response that is still closed from a person to a stimulus or object. Meanwhile, according to a social psychologist, Newcomb said that attitude is readiness or willingness to act, and not the implementation of certain motives. Attitude is a form of evaluation or feeling reaction. A person's attitude towards an object is a feeling of support or partiality (favorable) or not supporting or taking sides (unfavorable) towards that object. 12

The attitude of someone who cares about taking preparedness measures for themselves and others, so that the process of saving oneself when a disaster can occur. Attitudes can influence their preparedness for disasters, a good preparedness attitude means students' preparedness for earthquake disasters will also be better.

Attitude is a determining factor behavior due to related attitudes with perception, personality and motivation. Attitude is defined as mental preparedness, learned and in the organization through experience, and has a certain influence on the method one person's responsiveness to another person, objects and related situations with him. A positive attitude is characterized by action tendencies, namely approaching, liking, and hoping for objects

certain. Meanwhile, negative attitudes exist tendency to distance, avoid, hate and not liking certain objects.

Moabi (2008) shows that attitude of health workers regarding good disaster preparedness and respondents believe in the need to have insight into disaster management. Energy experience health in the face of various the kinds of disasters that occur provide a very meaningful lesson will be the importance of knowledge about disasters nature that every individual must have. 12,13 The more lots of experience of health workers in disasters will increase increase internal preparedness facing disaster.

Meanwhile attitude negative in this study, where respondents' answers show that there are still health workers worried about the impact disaster for him if it becomes volunteers when a disaster occurs, as well there are some respondents who feel that meets basic needs disaster victims are not their responsibility answered the health worker. This is in line with the results of Mohammed's research Diab and Mabrouk (2015) who reported that only a small portion from respondents in research on nurse in a hospital in Malaysia have a positive attitude towards disaster management.

According to previous research, this negative attitude is more influenced because there is still a lack of socialization related to disaster management, so respondents did not realize how much the need for health workers to understand about disaster management and the role of health workers in countermeasures activities disaster, considering the region of place live and work place is a disaster-prone area.

The frequency distribution of knowledge of health workers in disaster management at the Mataraman Community Health Center is as follows:

Table 3. Frequency Distribution of Health Workers' Preparedness in Disaster Management at Mataraman Community Health Center

Preparedness	Frequency	Percentage	
Poor	9	27,3%	
Good	24	72,7%	
Total	33	100	

Source: Primary Data, 2023

The results of the research above show that there are still 9 health workers (27.3%) who still need better preparedness in disaster management at the Mataraman Community Health Center. Based on questionnaire analysis, this negative attitude is partly because there are still health workers who believe that

cleaning sewers is carried out if a member of the community is affected by a disease such as dengue fever or malaria. Apart from that, when a flood occurs, there are health workers who believe that all family members should maintain body hygiene by bathing and brushing their teeth using flood water.

Disaster preparedness is a condition in which a society, both individually and in groups, has the physical and psychological ability to face disasters. Preparedness is an inseparable part of integrated disaster management. Preparedness is a form of when a disaster occurs and if the disaster is still a long time away from happening, then the best way is to avoid the risks that will occur, where you live, such as being far from the reach of floods.4 The level of preparedness for earthquakes can be seen by paying attention to preparedness factors, namely according to the Indonesian Institute of Sciences (LIPI) and UNESCO in 2006, including knowledge, attitudes, disaster emergency response plans, disaster warning systems and resource mobilization capabilities. An emergency response plan is a series of activities carried out immediately at the time of a disaster to deal with the negative impacts caused by a disaster, which includes rescue and evacuation activities for victims, property, fulfillment of basic needs, protection, management of refugees, rescue, and restoration of public infrastructure and facilities.

Emergency response planning is the desire to know the actions that have been prepared in the face of an earthquake disaster. This emergency response plan must, among other things, cover matters related to systems and methods for evacuation, assistance and rescue of victims resulting from disasters. With careful planning, it is hoped that we will be able to minimize the risks posed by disasters while increasing resilience in facing disasters.

# Bivariate analysis

The results of statistical of health workers in disaster management on disaster preparedness at the Mataraman Community Health Center are as follows:

Table 4. Analysis of differences in education level and incidence of diarrheal disease in the riverbank area in Banjar Regency

Variable	Preparedness				- Total		
	Poor		Good		lotai		p-value
	n	%	n	%	n	%	<del>_</del>
Knowledge							
Poor	0	0	4	100	4	100	
Good	9	31,0	20	69,9	29	100	0,555
Attitude							
Negative	5	31,3	11	68,7	16	100	
Positive	4	23,5	13	76,5	17	100	0,708

Source: Primary Data, 2023

The results of the research above show that there are still health workers who have good knowledge but lack disaster preparedness, namely 9 people (31.0%). Apart from that, there were 4 health workers (100%) who had poor knowledge but had good disaster preparedness. The statistical test results show that the p-value is > 0.555, meaning that there is no relationship between the knowledge of health workers in disaster management and disaster preparedness at the Mataraman Community Health Center.

Health workers who have poor knowledge in disaster management but have good disaster preparedness because they plan to save themselves and the community in the event of a flood disaster emergency, and actively involved in meetings or discussions for preparation and planning for reducing existing disaster risks. in the work environment and community environment, as well as being

actively involved in training or simulation activities regarding flood disaster risk reduction or independently seeking information about flood disaster risk reduction.

Knowledge is the result of sensing, or the result of a person's knowledge of an object through the senses they have including the senses of sight, hearing, taste, smell and touch. There are several factors that can influence a person's level of knowledge regarding disaster management. namely environment. experience/information, social culture and age. In accordance with the results of this research, age is also a factor that can influence knowledge. Age also cannot be separated from the experience one has had. The older or more experience a person has, the more mature the process of thinking and behaving. At the age of 30-45 years, individuals will play a more active role in society and social life and make more preparations for successful adaptation to old age.14

The results of the research above show that there are still health workers who have a positive attitude but lack disaster preparedness, namely 4 people (23.5%). Apart from that, there were 11 health workers (68.7%) who had a negative attitude but had good disaster preparedness. The results of statistical tests show that the p-value is > 0.708, meaning that there is no relationship between the attitude of health workers in disaster management and disaster preparedness at the Mataraman Community Health Center.

Health workers who have a negative attitude towards disaster management but have good disaster preparedness due to the support of the community health center for the availability of simple rescue and evacuation infrastructure such as life jackets and the like, are actively involved in meetings or discussions for preparation and planning for reducing disaster risks in the environment. work and community environment, and be actively involved in training or simulation activities regarding flood disaster risk reduction or independently seek information about flood disaster risk reduction.

Attitude is a determining factor in 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 the way a person responds to other people, objects and situations related to him. A positive attitude is characterized by action tendencies, namely approaching, liking and hoping for certain objects. Meanwhile, negative attitudes include a tendency to stay away from, avoid, hate and dislike certain objects.

Moabi (2008) shows that the attitude of health workers regarding disaster preparedness is good and respondents believe in the need to have insight into disaster management. The experience of health workers in dealing with various kinds of disasters that occur provides a very meaningful lesson regarding the importance of knowledge about natural disasters that every individual must have.

The preparation of disaster preparedness members or health teams for care service providers is currently still very limited, therefore increasing the competency of health care professionals is very necessary. Professional competence is not only achieved through formal education but can also be achieved non-formally, such as receiving training while working or at college, which is one of the educational curriculum programs.

Capacity refers to all the strengths,

attributes and resources available in a community, organization or society to manage and reduce disaster risks and strengthen resilience. 18 Capacity in the concept of disaster risk reduction is analyzed as the relationship between the strength of these types of resources by various groups at risk and the overall system and structure of society that can increase or decrease capacity in facing threats. So community capacity can be defined as a form of effort to defend itself from the threat of a disaster. So, to become a resilient society, we need the ability to face disasters. 16 Because society is the main party affected when a disaster occurs, having quality capacity and potential is necessity in а dealing with a disaster.

Capacity for preparedness is related to the ability of a community or group to face the threat of disasters that occur. Community capacity in the context of disaster risk reduction which is expected to be carried out in a sustainable manner. Therefore, a policy is needed that can be used as a basis for forming community groups that are empowered to face the threat of disaster. <sup>17</sup>

The readiness of health workers in disaster situations is required to be capable managing daily services, services for victims of disasters, as well as being active assist in saving the lives of disaster victims. <sup>18</sup> Lastly, there are significant efforts made by the Indonesian government to expand and improve standards of health service provision.

However, Despite these efforts, the health system is still not well developed. Apart from the increasing role of the private sector, this growth will not occur as an investment to improve public health services but directing the development of economic supporting infrastructure. It was reported that health services were only covered by 67.0% of the population is mostly in urban areas, and only 35.0% of the community rural areas. <sup>19</sup>

Limited internal health services Disaster management is one of the causes of increasing death rates and pain. Readiness of health workers to record events disasters are influenced by the competencies they have, concerns about personal safety and concern for their families. Demographic characteristics such as the gender of health workers are evident also reported its relationship with preparedness in responding to disasters. One survey of health care workers found that women were lacking ready to report when a disaster occurs, have stress and psychological pressure higher than men.

A high level of preparedness shows the ability of the community to understand disaster

risks, so that they are able to prepare themselves if a disaster occurs. The ability to prepare oneself is very important because it is part of preventive or pre-disaster prevention measures against serious or large risk situations during or after a disaster.<sup>15</sup>

### **CONCLUSION**

Based on the results of the research conducted, it shows that there are still 4 health workers (12.1%) who still have poor knowledge in Disaster Management, as many as 16 health workers (48.5%) still have a negative attitude towards Disaster Management, and as many as 9 health workers (27.3%) still had poor preparedness in disaster management at the Mataraman Community Health Center. The of statistical tests showed no relationship between knowledge and attitudes of health workers in disaster management on disaster preparedness at the Mataraman Community Health Center with p-values of 0.555 and 0.708 respectively.

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