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Smart-B Program as an effort to improve disaster preparedness: Case study of Sejinjang Village

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Abstract

Background: Natural disasters that often occur in Indonesia, such as floods, are the most common type of disaster in the world. For this reason, the SMART-B (Disaster Response Community Unit) program was designed as one of the steps to form a community that has the knowledge to be able to adapt in flood-prone areas, face flood threats, and recover quickly from various disaster impacts. This study aims to determine the level of community knowledge of the SMART-B (Disaster Response Community Unit) program in flood-prone areas in Sejinjang Village.
Method: This research method is descriptive research with a cross-sectional approach using the Cluster Random Sampling technique, which is a sampling process by dividing the population based on clusters or regions. The study population amounted to 1,076 family heads, with the number of samples studied as many as 94 family heads.
Results: The results showed that out of 94 respondents, the dominant level of knowledge was in the good category as many as 15 respondents (16%), sufficient as many as 69 respondents (73.4%), and less as many as 10 respondents (10.6%).
Conclusion: Thus, it can be concluded that the level of community knowledge of the SMART-B (Disaster Response Community Unit) program in flood-prone areas in Sejinjang Village falls into the 'good enough' category.

Keywords: Natural disasters; Community; SMART-B Program.

INTRODUCTION

Indonesia's geographical location makes it one of the areas prone to natural disasters. Indonesia, which is also located in a tropical climate, has two seasons, namely the rainy season, the dry season and the rainy season.(1),(2) Disasters that are known to be prone to in Indonesia are landslides, floods, and earthquakes, strong winds, volcanic eruptions, and even forest fires. This problem occurs because Indonesia is located right at the meeting point of three earth plates, as a result of this location, Indonesia is ranked 3rd in the world as the most vulnerable country and often experiences flood disasters.(3),(4)

According to Law Number 24 of 2007 concerning Disaster Management, a disaster is an event or series of events that can threaten and disrupt people's lives caused by natural, non-natural, and social factors that can result in human casualties, property losses, environmental damage, and psychological impacts. Disasters can be divided into three types, namely: a) Natural disasters such as earthquakes, tsunamis, volcanoes, storms and droughts; b) Social disasters due to human actions such as conflict, war, terrorist attacks, technological failures and pests; and c) Mixed natural and human disasters, namely floods, forest fires and food shortages.(5),(6)

Natural disasters that often occur in Indonesia, namely floods, floods are the most frequent disasters in the world. There is a high percentage of flood victims in the world, which is 55%. While in Indonesia, floods reach 38% of all disasters.(7) Indonesia has high rainfall, ranging from 2000-3000 mm/year, so floods easily occur during the rainy season, between October and January. There are 600 large rivers spread throughout Indonesia that are in worrying conditions and are not properly

managed, causing flooding.(8) Meanwhile, data from the Jambi provincial BPBD recorded that up to January 22, 2024, there were at least 10 regencies/cities with 87 sub-districts and 575 villages/sub-districts affected by flooding, including Jambi city with 6 sub-districts with 8 sub-districts.

Flood disasters almost occur in all regions in Indonesia, one of which is in Jambi province, precisely in Sejinjang sub-district, Jambi City. Based on an interview conducted with one of the residents in the area, their place is an area that is very prone to flooding because of the low-lying location so that when the river water capacity overflows due to rain, the area will be flooded for up to two weeks to a month, the flood disaster will occur in December to April and also the height of the flood reaches the thighs of adults so that to carry out activities outside the house, residents around use boats where each resident's house has a boat.(9)

Seeing these conditions, researchers took the initiative to create a SMART-B (Disaster Preparedness Community Unit) program as one of the steps in forming a community that has the knowledge to be able to adapt in areas prone to flooding, face the threat of flooding, and recover quickly caused by various impacts of disasters, therefore the community must have knowledge about disaster preparedness community units (SMART-B) in dealing with future disasters, not only during post-disaster but also during pre-disaster and during disasters. The SMART-B (Disaster Preparedness Community Unit) program includes disaster response socialization, guard post pickets, and also bye-bye garbage actions.(10)

knowledge is the result of knowing and this occurs after someone senses a particular object. Community knowledge in this study is the result of knowing obtained by the community regarding the disaster preparedness community unit program (SMART-B) and knowledge regarding flood disasters in Sejinjang sub-district.(11) Several previous research results related to community knowledge and attitudes towards flood disaster preparedness, one of which is regarding the implementation of disaster preparedness training (sigana) in improving disaster preparedness, found that disaster preparedness training is effective in improving disaster preparedness in the community.(12)

SMART-B program (disaster preparedness community unit) as one of the steps to improve knowledge in Sejinjang sub-district. This study aims to determine the level of community knowledge of the SMART-B program (disaster preparedness community unit) in flood-prone areas.

METHOD

This study used a descriptive design with a cross-sectional approach to evaluate community knowledge about the SMART-B program as an effort to improve disaster preparedness in Sejinjang Village, Jambi City. The population in this study were all heads of families in Sejinjang Village, totaling 1,076 people. Of these, 94 heads of families were selected as samples using the Cluster Random Sampling technique, with a sample calculation based on the Slovin formula and an error rate of 10%.

Data collection was conducted using a structured questionnaire consisting of open-ended and closed-ended questions. The questionnaire was designed to collect information on respondents' characteristics (such as age, gender, and occupation) as well as their level of knowledge of the SMART-B program and disaster preparedness. Validation was conducted on the questionnaire before use to ensure the accuracy of the data.

Data were analyzed univariately to describe the characteristics of respondents and their level of knowledge. The results of the analysis were presented in the form of frequency distributions and percentages. Community knowledge was categorized into three categories: good (≥76% correct answers), fair (56-75% correct answers), and poor (<56% correct answers).

RESULTS

1. Respondent Characteristics

Respondent characteristics based on age can be described that the majority of respondents are aged between 28 and 37

years, which is 40.4%, while the age group of 48 to 57 years is the respondent group with the lowest percentage, which is 9.6%, the gender of the respondents is mostly women, which is 54.3%. The job descriptions of respondents to earn income are mostly private employees 31.9%, housewives 26.6%, farmers 19.1% and followed by ASN workers 11.7%. In this study 5.3% were civil servants and 5.3% were students.

Table 1 Frequency Distribution and Percentage of Respondent Characteristics Based on Age, Gender, and Occupation in Sejinjang Subdistrict (n=94)

Characteristics	Frequency (n)	Percentage (%)
Age		
17-27 Years	25	26.6
28-37 Years	38	40.4
38-47 Years	22	23.4
48-57 Years	9	9.6
Total	**94**	**100**
Gender		
Man	43	45.7
Woman	51	54.3
Total	**94**	**100**
Work		
Housewife	25	26.6
Farmer	18	19.1
Private sector employee	30	31.9
Laborer	11	11.7
Students	5	5.3
civil servant	5	5.3
Total	**94**	**100**

2. Univariate Analysis

Level of Knowledge About Community Knowledge of the SMART-B (Disaster Preparedness Community Unit) Program

Based on tabel 2, it can be explained that 94 respondents have different levels of community knowledge about the SMART-B (Disaster Preparedness Community Unit) program. Respondents who answered the question "Does every community have to know that their area is prone to flooding" with the category yes were 81 respondents (86.2%). Respondents who answered the question "does every RT have to have a disaster post" with the category no were 48 respondents (51.1%).

Table 2 Frequency and Percentage Distribution of Statements on the Level of Public Knowledge Regarding the SMART-B (Disaster Preparedness Community Unit) Program (n=94)

Question	YES n(%)	NO n(%)
Should every society know about disasters?	91 (96.8%)	3 (3.2%)
Should every community know what a flood disaster is?	84 (89.4%)	10 (10.6%)
Should people prepare life jackets and rubber boats for first aid when flood waters continue to rise?	60 (63.8%)	34 (36.2%)
Does each RT have a garbage disposal site or a joint mutual cooperation activity?	60 (63.8%)	34 (36.2%)
Is littering one of the most common causes of flooding that humans do?	79 (84%)	15 (16%)
Should families create a safety plan to anticipate flooding?	61 (64.9%)	33 (35.1%)
Should every member of the community be actively involved in disaster risk reduction preparation and planning meetings in their environment?	69 (73.4%)	25 (26.6%)
Does every RT have to have a disaster post?	46 (48.9%)	48 (51.1%)
Does every member of society need to consider disaster risks when building a house?	65 (69.1%)	29 (30.9%)
Should every home have a first aid kit or essential medicines for family first aid (such as betadine, diarrhea medicine, flu medicine, etc.)?	77 (81.9%)	17 (18.1%)
Does every community need to know that their area is prone to flooding?	81 (86.2%)	13 (13.8%)
If a flood disaster occurs, are there relatives/family/friends who can provide temporary shelter in an emergency?	54 (57.4%)	40 (42.6%)

Based on the table 3, it was obtained information that out of 92 respondents, 15 respondents (16%) had knowledge of the SMART-B program (disaster preparedness community unit) with a good category, while in the sufficient category there were 69 respondents (73.4%). There were still 10.6% of people who lacked knowledge of the SMART-B program (disaster preparedness community unit).

Table 3 Frequency and Percentage Distribution of Community Knowledge Levels Regarding the SMART-B (Disaster Preparedness Community Unit) Program (n=94)

Level of Knowledge	Frequency (n)	Percentage (%)
Good	15	16%
Enough	69	73.4%
Not enough	10	10.6%
Total	**94**	**100**

DISCUSSION

1. Description of Respondent Characteristics

Respondents in this study were 94 people living in 10 neighborhood units (RT) in Sejinjang sub-district, considering that people living in the RT had experienced flooding. Of the total respondents, most were women. The characteristics of work were dominated by work as private employees. Furthermore, livelihoods as an effort to meet family needs were carried out by farming, private employees, and laborers.

Respondents in this study were also not limited to a certain age group, overall respondents included groups under 20 years old, 20 years old to 57 years old. The highest percentage was in the 28-37 year age group, which was 40.4%.(13) Related to the context of research on knowledge of SMART-B (disaster preparedness community units), it is ideal that this topic should be understood by every age. From a study conducted by Pomalango, et al.(14) in Biau village, it was concluded that the SMART-B program is one of the effective steps in reducing problems in disaster-prone areas including flooding.

The characteristics of respondents in this study were mostly women. Women have a strategic role in disaster management and can be effective agents in transferring their knowledge to the next generation.(15) Especially for improving the skills and abilities of individuals, families, and communities in dealing with disasters to reduce the number of people exposed to disaster risk, on the other hand women and children are vulnerable groups in disaster situations as mandated in Law Number 24 of 2007 concerning Disaster Management.(16)

2. Description of community knowledge of the SMART-B (disaster preparedness community unit) program in flood-prone areas in Sejinjang sub-district.

Based on the research data, the results obtained from 94 respondents who had a good level of community knowledge of the SMART-B (disaster preparedness community unit) program were 15 respondents (16%), while in the sufficient category there were 69 respondents (73.4%). There were still 10.6% of people who lacked knowledge of the SMART-B (disaster preparedness community unit) program. This study describes the level of community knowledge of the disaster preparedness community unit program in Sejinjang Village in the sufficient category with a percentage of 73.4% where the sufficient value is in the range of 56-76%. Respondents who have a good level of knowledge enter the analysis stage where they know and understand the SMART-B (disaster preparedness

community unit) program and try to apply it in the surrounding environment to anticipate when a flood occurs.

Respondents who have sufficient knowledge, they enter the stage of understanding but have not been able to apply the knowledge they have acquired.(17) Respondents who have insufficient knowledge enter the stage of knowing where respondents can only remember and mention what they have learned previously. Supported by Notoadmodjo(16) Knowledge can be categorized into 6 levels: application, knowing, understanding, analysis, synthesis, and assessment, Community knowledge in this study is the result of knowledge obtained by the community about what a disaster preparedness community unit is and what actions need to be taken in areas prone to flooding.(18)

The results of the study showed that the level of public knowledge based on work was categorized as sufficient, namely private employees as many as 18 respondents (60.0%). According to the researcher, work contributes to public knowledge, because someone who has worked has extensive experience and more experience compared to people who do not work and an individual will take action based on their experience.(19) This can be assumed by the researcher that public knowledge of the SMART-B (Disaster Preparedness Community Unit) program is categorized as sufficient because it shows that most people have begun to realize the importance of how the community can remain alert in dealing with disasters including floods in disaster-prone areas, but there are still people who do not understand what smart-b (disaster preparedness community unit) is.(20)

CONCLUSIONS

This study shows that the SMART-B (Disaster Preparedness Community Unit) program can be one of the effective efforts to improve community preparedness for disasters, especially in flood-prone areas such as Sejinjang Village, Jambi City. From the results of the study, the majority of respondents showed a good level of knowledge about this program, although a small proportion were still in the moderate or insufficient knowledge category.

The community-based approach implemented through SMART-B allows communities to actively participate in disaster preparedness activities, such as education, evacuation simulations and coordination with related parties. This supports the formation of a more responsive and organized community in dealing with emergency situations.

However, the study also identified some challenges, such as the lack of in-depth understanding in certain groups and the need for improved access to information. Therefore, strengthening the SMART-B program through regular training, continuous monitoring, and adjusting local culture-based education methods are suggested to improve the effectiveness of the program.

In the future, similar studies can be conducted in other regions to evaluate the implementation of the SMART-B program in different geographical and social contexts. In addition, further studies are needed to explore the direct impact of this program on reducing disaster losses.

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