

Elderly Took Preventive Role in Facing Flood Threat in Mountain Slope Area in Jember, East Java

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Abstract: *Tempurejo Subdistrict is a cantilever for Meru Betiri National Park in the southern part of the Jember Regency. In every rainy season, several villages in this sub-district are flooded. Hence flood disaster preparedness education becomes very necessary. Knowledge and understanding of disaster preparedness must be known to anticipate disaster situations quickly and accurately. The purpose of this activity is to provide education to the community regarding before, during, and after disaster management. In addition, to maintain the sustainability of the community, a sub-district disaster preparedness team was formed and continuously assisted. The activity was held in October 2021 with the target of Karang Wreda Abiyoso members. Counseling materials were related to flooding disaster preparedness and the risk disease of post-flood through videos and disaster response pocketbooks. As a result, there was an increase in the post-test than the pre-test, so this counseling effectively increased the participants' knowledge.*

Furthermore, disaster response training was carried out, and one of the training courses was preparing a disaster preparedness bag. As a result, 9 out of 10 participants could simulate the preparation of a disaster preparedness bag within the allotted time. Furthermore, continuous assistance was carried out through the WhatsApp Group. This team is expected to be able to disseminate disaster preparedness knowledge to residents and increase understanding regarding appropriate disaster preparedness in their area.

Keywords:

disaster; disaster response team; elderly; flood

Introduction

National Agency for Disaster Management (BNPB) data states that Jember is one of the areas prone to flooding. Floods from January 12, 2021, until January 12, 2021,

flooded Jember and impacted 3,986 families. Floods occurred in seven sub-districts in Jember, namely Bangsalsari, Tanggul, Gumukmas, Puger, Ambulu, Tempurejo, and Jenggawah sub-districts. The most severe flooding occurred in the Tempurejo sub-district. High rainfall also resulted in subsequent flooding in Tempurejo District. The number of families affected by the flood in Tempurejo District reached 2,320 families 1. The village most severely affected by the flood was Wonoasri Village. The high water made access to the location difficult, so the evacuation process was also slightly hampered. Based on topographical conditions, Tempurejo District is the southern part of the lowland area². Based on BPBD data, Tempurejo District has been mapped as a flood-prone area³. Floods in Wonoasri Village, Tempurejo District, was caused by the confluence of two rivers: the Sanen River and the Mayang River. The presence of blockages in the watershed also increases the risk of flooding.

The urgency of this community service is to increase the capacity of the community in dealing with flood disasters through increasing knowledge about what activities need to be done when dealing with floods and the risks of diseases that may be suffered after the disaster. It is hoped that by increasing the community's capacity to read the risks that may occur during a flood and be able to self-evaluate. In addition, it is hoped that the public will know the potential for diseases that may arise in each individual and be able to prevent and overcome the illness so that the severity of the condition does not occur. Community capacity building is also expected to be able to minimize the impact of disasters.



Figure 1. Preliminary Survey after Flood

Based on topographical conditions, Tempurejo Sub-District is the southern part of the lowland area. Based on BPBD data, Tempurejo District has been mapped as a flood-prone area. Floods in Wonoasri Village, Tempurejo District, was caused by the

confluence of two rivers: the Sanen River and the Mayang River. The presence of blockages in the watershed also increases the risk of flooding. Temporejo has one of the most active elderly communities in Jember Regency, Karang Wreda Abiyoso. This community also generates the Elderly Integrated Guidance Post (Posbindu), which is becoming more routine and functional.

Problem

High rainfall in Jember Regency increases the risk of flooding. It was recorded that until January 2021, there had been several floods. Floods repeatedly occur due to high rainfall in the Jember Regency area. Floods in Jember Regency occurred in several sub-districts; the worst impact happened in the Tempurejo sub-district, Wonoasri village. The high water resulted in delays in the evacuation process by the officers. It was recorded that the flood in January 2021 impacted 2,558 families in Wonoasri Village. The impact of flooding that is not immediately evacuated is causing casualties, especially for vulnerable groups such as the elderly, toddlers, and pregnant women.

Diseases caused after the flood also need to be considered. The presence of standing water increases the risk of leptospirosis and dengue fever. Little clean water affects sanitation hygiene which affects digestive tract diseases such as diarrhea, typhoid, and hepatitis A. Diseases that arise after the flood disaster are infectious diseases that can potentially cause outbreaks (Alderman et al., 2012). The community must understand how to prevent post-disaster disease. Tempurejo District is a flood-prone area. The community's ability to deal with flood disasters needs to be improved both during and after the disaster to minimize the disaster's impact.

Target solution

Based on these conditions, the target solution in community service included basic counseling activities to deal with flood disasters and the risk of post-flood disease provided by a team of disaster experts and doctors from the University of Jember to residents of Tempurejo District. The material provided includes understanding flood disasters, signs of flooding, the efforts made during a flood, potential diseases that may occur after a flood, and prevention and mitigation efforts. Subsequently, a village disaster preparedness team was formed, which was then provided with a simulation of the disaster response mechanism. In addition, the community service team also created a WhatsApp Group consisting of a team of disaster experts, doctors and the Tempurejo District disaster preparedness team to provide ongoing assistance and consultation facilities between the disaster preparedness team and the expert team. Furthermore, it is hoped that the village

disaster preparedness team will become a distributor of information regarding disaster alertness to residents around where they live. In addition, this team is expected to monitor conditions or signs of potential disasters and report to the village government. The primary contribution of this activity is that residents in Wonoasri Village, Tempurejo District, Jember, can read the risks that may occur during a flood and evacuate themselves. In addition, it is hoped that the public will know the potential for diseases that may arise in each individual and be able to prevent and overcome the illness so that the severity of the condition does not occur.

Method

This community service was conducted in October 2021 through direct socialization and training in the village meeting hall of Wonoasri. Wonoasri was the village most affected by the flood last January 2021. The participants were the Abiyoso Elderly Group members at Tempurejo Subdistrict, the elderly cadre of the Elderly Integrated Service Post (POSBINDU). Since it was conducted during the Covid-19 pandemic, we ensured the implementation complied with the health protocols of Covid-19 prevention, such as working outdoors, < 15 people, < 3 jam/each meeting, all of us wore a mask, and the participants were healthy.

We chose the elderly as our participants. Next would be the disaster preparedness team because this team focuses on raising awareness of disaster preparedness among people in Tempurejo. Hence through the elderly, the knowledge related to disaster preparedness will smoothly deliver, and people tend to listen and pay attention when the elderly give them advice. In the way the elderly share knowledge, they give generously. Moreover, older people must be given more chances to learn since they want to contribute to society, and the volunteers are typically seniors. The elderly involvement would hopefully increase awareness of disaster prevention and preparedness among the Tempurejo people.

Ten participants of the disaster preparedness team candidate attended the socialization with health protocols during the COVID-19 pandemic by performing social distancing, wearing masks, and washing hands before joining the socialization. The socialization methods were counseling and self-practicing by a disaster preparedness team candidate, and after socialization, they were assisted by experts.

Result

On Sunday, October 24, 2021, this community service was held at the Wonoasri Village Hall entitled "Creating the Disaster Preparedness Team of Tempurejo." Based on the initial observation results, the flood that happened in Tempurejo Subdistrict,

especially in Wonoasri village, was the most impacted by flood because of the heavy downpour. The flooding was caused by high-intensity rain from higher land areas.

Our programs consisted of 4 stages:

Stage 1. Socialization

This session used the lecture method, question, answer, and discussion between the team and participants. The material is delivered as Microsoft Powerpoint, and each participant gets a hard copy in the "Disaster Preparedness Team Guidance Pocketbook" form (figure 3). The materials presented include pre-disaster and disaster preparedness, including the causes of flooding, prevention methods, post-flood disease risks, disease risk factors, and prevention and mitigation efforts. This session was 90 minutes. There was a pre-test before socialization started and a post-test after socialization. The result was increasing in participants' knowledge (figure 2).

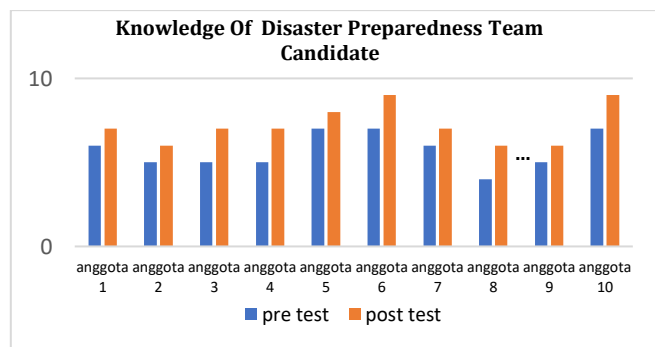


Figure 2. Pre-test & Post-test Results of Socialization

Stage 2: Formation of disaster preparedness team

Based on disaster preparedness village regulations that encourage villagers' empowerment, we developed **the village disaster preparedness team** from representatives of Tempurejo Subdistrict residents, consisting of 10 elderly residents that active members of the elderly community (Karang Wreda Abiyoso). We choose the elderly because they are the best model for educating Tempurejo residents. They provide emotional support and friendship, like the senior who looks in on a house-bound friend to ensure everything is alright and stays for a chat. Seniors provide care for neighbors or friends. The formation of the team begins with an explanation of the duties and responsibilities of the Disaster Preparedness Team, including providing information obtained to other residents. This team will also report and coordinate with the village government regarding the disaster. They also got the Disaster Preparedness Team Guidance Pocketbook (figure 3). After the pocketbooks were distributed, the disaster preparedness team was trained to understand their contents, and if anything were unclear, it would be explained again.

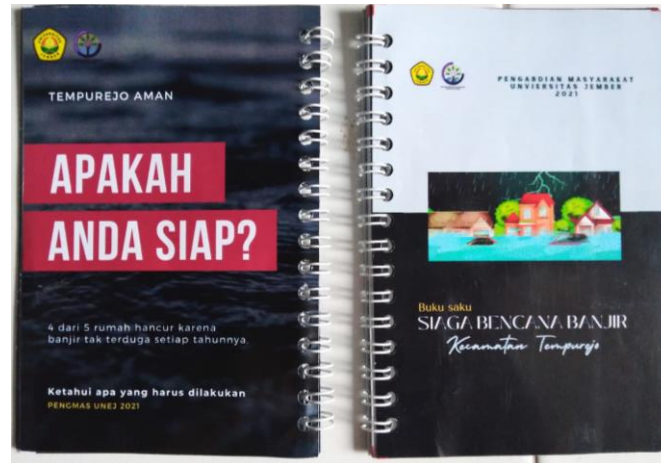


Figure 3. Disaster Preparedness Team Guidance Pocketbook

Stage 3: Flood preparedness training

The flood alert simulation activity is carried out by direct practice from what has been conveyed in the counseling material. This session was 30 minutes. The speaker gave an example of how we respond to flood disasters. This activity includes actions that must be taken when a flood disaster occurs. In this activity, participants were trained about what needs to be recognized to read the symptoms of a flood disaster. After the signs of symptoms increase, what are the following steps to take, including securing electronic goods or other items in a higher place, turning off all electric currents, and placing disaster alert bags that have been prepared in advance so that they are easily accessible during emergency conditions? Immediately evacuate ourselves when the water flow gets higher to the designated evacuation route. After that, participants were asked to simulate one by one directly the steps that need to be taken if a flood occurs, such as a family emergency plan; they should also mention the ten most essential items required and must be carried (in a bag) during a disaster (figure 4). The result was 9 out of 10 participants could practice it perfectly in the allotted time.



Figure 4. Simulation of Preparing Disaster Preparedness Bag

Stage 4: Team mentoring

After everything was understood, a WhatsApp Group was formed to facilitate the coordination process. The WhatsApp Group contains a team of disaster management experts, doctors, and members of the newly formed disaster preparedness team. This WhatsApp group was also to facilitate the mentoring process carried out by the community service team. Monitoring will continue after the training, and updated disaster information will be provided. So it is hoped that this activity can be a forum for consultation and monitoring (figure 5).

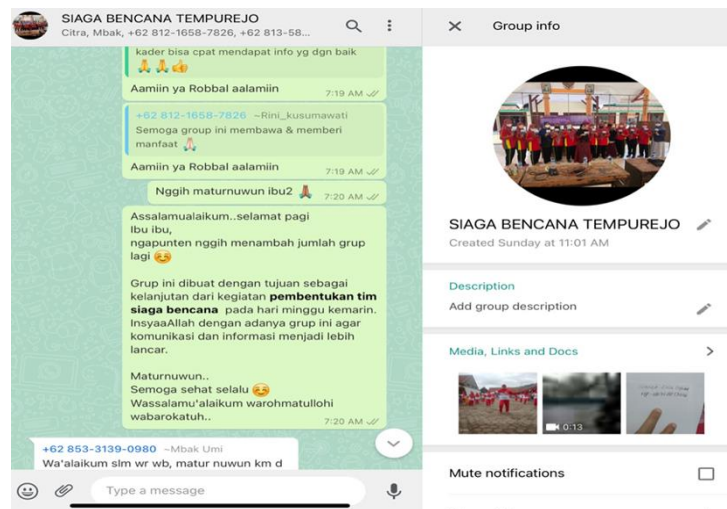


Figure 5. Assistance for Disaster Preparedness Team Via Whatsapp

Discussion

We know that socialization was adequate for increasing the participants' knowledge. Knowledge is the result of learning, which occurs after particular objects have been taught to people. According to previous community development, information access influences knowledge level. Lack of information caused ineffective acts and attitudes (Saputra & Mulasari, 2017). The more information a person obtains, the better his understanding and knowledge. Moreover, according to disaster preparedness village regulations, villagers' empowerment is encouraging (National Agency for Disaster Management (BNPB), 2012b). That was why we developed the village disaster preparedness team from representatives of Tempurejo Subdistrict residents, consisting of 10 elderly residents that are active members of the elderly community (Karang Wreda Abiyoso).

We choose the elderly because they are the best model for educating Tempurejo residents. They provide emotional support and friendship, like the senior who looks in on a house-bound friend to ensure everything is alright and stays for a chat. Seniors provide care for neighbors or friends. Moreover, making social contact by gathering

with peers, communicating, and educating people can reduce stress and boredom for the elderly (Setyorini et al., 2018). Acknowledging seniors' contributions would help to make ours a more age-inclusive society that does not pit one generation against the other. The pocketbook given was expected to be used as a guideline for the team in disaster prevention and management.

The pocket book consists of the definition of flooding, types of floods, factors causing flooding, flood impacts, preparation before flooding, preparation for floods, contents of disaster preparedness bags, disease during floods (Alderman et al., 2012), and emergency contacts. Through practice, participants would be easier to understand and remember (Azza & Wardhana, 2021). The facilitator should give an example of how to respond to flood disasters. This activity includes actions that must be taken when a flood disaster occurs. In this activity, participants were trained about what needs to be recognized to read the symptoms of a flood disaster (Khambali, 2017). After the signs of symptoms increase, what are the following steps to take, including securing electronic goods or other items in a higher place, turning off all electric currents, placing disaster alert bags that have been prepared in advance so that they are easily accessible during emergency conditions (National Agency for Disaster Management (BNPB), 2012a)?

Conclusion

Socialization and counseling regarding flood disaster management increased knowledge of the disaster preparedness response team at Tempurejo Subdistrict. Furthermore, 9 out of 10 participants could simulate the preparation of a disaster preparedness bag within the allotted time. Again, continuous assistance was carried out through the WhatsApp Group. Moreover, this team is expected to be able to disseminate disaster preparedness knowledge to residents and increase understanding regarding appropriate disaster preparedness in their area. We suggest coordination and cooperation are needed with the village apparatus and BPBD to support future team activities.

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