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Enhancing the Capacity of Village Disaster Teams Through Community-Based Emergency Management Training

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ABSTRACT

Background: Sintuwulemba Village, Poso Regency, is a high-disaster-risk area where community emergency response capacity is limited. The local Village Disaster Team lacks specific training in managing critical conditions like severe bleeding, respiratory arrest, and shock, often leading to fatal delays. **Objectives:** This community service initiative aimed to enhance the team's emergency response capabilities through integrated training. **Methods:** The two-day intensive program utilized lectures, demonstrations, realistic field simulations, and group discussions. **Results:** Pre- and post-training assessments demonstrated a marked improvement in participant competency, with the average test score increasing from 52% to 88%. The outcomes of this activity include a comprehensive training module, an instructional video, and this report. **Conclusion:** These resources are designed to bolster the long-term resilience and self-sufficiency of the Sintuwulemba community in disaster situations, contributing to the ultimate goal of reducing disaster-related morbidity and mortality.



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INTRODUCTION

Poso Regency, located in Central Sulawesi Province, is among the regions in Indonesia with a high vulnerability to disasters. Based on data from the Poso District Disaster Management Agency (BPBD), more than 20 natural disasters such as floods, landslides, and land fires occurred over the past three years, resulting in both material losses and casualties. One of the affected villages is Sintuwulemba, which not only faces frequent natural disasters but also has limited health facilities. This area is categorized as highly prone to isolation during disaster events, leading to delays in emergency response (Aprilia et al., 2025). Although a Village Disaster Team (VDT) has been established as part of the local preparedness system, preliminary interviews and observations revealed that over 85% of the team members have never received basic emergency training, including first aid, Basic Life Support (BLS), or evacuation

techniques. This gap is critical considering that the “golden period” in trauma management determines survival and recovery outcomes (Aji et al., 2022). The lack of readiness in providing initial assistance can significantly increase disaster-related morbidity and mortality. Therefore, structured interventions are urgently needed to strengthen community-based emergency management capacity.

In response to this issue, this community service program was designed to provide community-based emergency management training for members of the Sintuwulemba Village Disaster Team. The two-day program included theoretical sessions, direct demonstrations, group discussions, and field simulations. Training materials covered first aid for severe wounds, extremity injuries, respiratory problems, shock, and Basic Life Support (Mataburu et al., 2023). Participants were also trained in safe and effective victim evacuation techniques suited to the village’s geographical conditions. A participatory approach was emphasized throughout, actively involving community members in disaster simulation and local emergency planning. The outputs included a training module, educational video, and activity report, which are expected to be used sustainably by the village. Beyond technical skill development, this program also fostered confidence and self-reliance in crisis situations (Susila et al., 2023).

The training followed national and international standards for emergency management, such as the American Heart Association (AHA) Basic Life Support Guidelines and the Indonesian Ministry of Health’s Community Emergency Response Training Manual (Kemenkes RI, 2018). Several studies have confirmed the effectiveness of BLS training in improving community responsiveness. Mailani et al. (2022) reported that BLS training improved community skills in responding to cardiac arrest by 70%. Similarly (Mailani et al., 2022) menunjukkan bahwa pelatihan BHD meningkatkan keterampilan komunitas dalam merespons henti napas hingga 70%. Similarly, Alami et al. found that community-based simulations enhanced local teams’ preparedness and coordination during disaster evacuation (Alami et al., 2023). Referring to the internationally recognized Community-Based Disaster Risk Reduction (CBDRR) approach, this program also incorporated local risk reduction principles emphasizing active community participation, resource utilization, and social empowerment (Legowo et al., 2022).

This activity aimed to improve the knowledge, skills, and preparedness of the Sintuwulemba Village Disaster Team in handling emergency situations through structured and participatory technical training. It is expected that participants will be able to provide appropriate first aid before professional medical help arrives, reducing response time and saving lives during the critical phase.

Short-term benefits include improved practical competence and confidence among VDT members in handling emergencies. Long-term benefits include establishing a resilient, independent, and disaster-ready community, contributing to reduced mortality and disability rates due to delayed emergency response. The program can also serve as a replicable model for other villages with similar vulnerabilities in Poso Regency and beyond.

METHODS

The training activity was conducted at the Sintuwulemba Village Hall, Lage District, Poso Regency. The venue was selected for its accessibility and strong support from local authorities. The program was held over two days, on May 5 and May 9, 2025. The main partner for this activity was the Sintuwulemba Village Disaster Team

(VDT). A total of 30 participants attended, representing the VDT, community health cadres, youth organizations, and local leaders.

1. The preparation phase included field observations to identify local needs and potentials, as well as to assess baseline community understanding of emergency management. Subsequently, a locally contextualized training module was developed, covering basic emergency concepts, Basic Life Support (BLS), first aid for wounds and injuries, and victim evacuation techniques.
2. The implementation phase included education, demonstrations, and simulations. Topics covered included types of community emergencies, BLS principles, management of open and severe wounds, and victim evacuation techniques during disasters.
3. The evaluation phase aimed to measure the program's effectiveness and participants' competency achievements. Both quantitative and qualitative assessments were used, including pre-test and post-test questionnaires administered to all participants. Direct observations during practice and simulations were also conducted to assess technical performance, teamwork, and participants' independence in performing emergency procedures.

Program success was measured using several predetermined indicators. First, participants' knowledge of emergency concepts and community-based response systems increased, as evidenced by improved pre-test and post-test scores. Second, participants' practical skills in performing BLS, wound care, and victim evacuation improved significantly, as observed during demonstrations and simulations.

This community service program was conducted in Sintuwulemba Village, Poso Regency. The location was selected due to its high disaster risk and the strong support from local authorities. The program was implemented over two days, on May 5 and May 9, 2025, in collaboration with the Sintuwulemba Village Disaster Team (VDT). A total of 30 participants were involved, comprising members of the VDT, community health cadres, local youth organizations, and village leaders. The program was structured into three sequential phases to ensure a comprehensive approach to capacity building:

This initial phase involved a field observation to conduct a needs assessment, identifying specific local vulnerabilities and gauging the baseline level of emergency preparedness. Based on this assessment, a tailored training module was developed. The module covered fundamental emergency concepts, Basic Life Support (BLS) following American Heart Association guidelines, first aid for various wounds and fractures, and victim evacuation techniques adapted to the local terrain.

The core training was delivered through an interactive combination of education, demonstration, and simulation. The educational sessions covered key topics, including:

Recognition of common community emergencies, principles of BLS, with a focus on chest compressions, rescue breathing, and the use of an Automated External Defibrillator (AED), management of severe bleeding, open wounds, and fractures. Safe victim evacuation and transport techniques, including the use of improvised materials. Following each theoretical session, instructors demonstrated the correct procedures. Participants then engaged in hands-on practice and realistic field simulations based on probable disaster scenarios (e.g., post-earthquake triage and evacuation) to reinforce their learning. The program's effectiveness was assessed using a mixed-methods approach to evaluate both knowledge acquisition and practical skill competency. Quantitative Assessment: A pre-test and post-test questionnaire,

consisting of 20 multiple-choice questions on emergency management, was administered to all 30 participants to measure the change in knowledge levels. Qualitative Assessment: Direct observation was conducted by certified instructors during the practical sessions and final simulations. Participant performance was evaluated using a standardized checklist that assessed technical proficiency in BLS steps, correct wound management, and the safe execution of evacuation techniques.

RESULTS AND DISCUSSION

The primary quantitative measure of the program's effectiveness was the change in participants' knowledge scores. The evaluation revealed a substantial improvement, with the average test score increasing from 47 (pre-test) to 89 (post-test) upon completion of the training. This dramatic rise of 42 points clearly demonstrates the success of the educational intervention in transferring critical knowledge about emergency concepts, Basic Life Support (BLS), and first aid to the Village Disaster Team members. Beyond test scores, direct observation during the hands-on simulations provided qualitative evidence of skill development. Participants who initially showed hesitation were able to correctly perform chest compressions, manage simulated severe wounds with appropriate techniques, and execute safe victim evacuation by the end of the training. This progression from theoretical understanding to practical competency is essential for building a capable first-response team. The participatory approach, which utilized local resources and scenarios, was instrumental in fostering this practical confidence and ensuring the skills were relevant to the Sintuwulemba context.

The results directly address the critical gap in local capacity identified prior to the intervention. The significant knowledge gain and observed skill acquisition confirm that the program successfully met its objective of enhancing the VDT's emergency response capabilities. This is particularly crucial for Sintuwulemba, a village vulnerable to isolation during disasters where immediate external help is unreliable. The findings align with the principles of Community-Based Disaster Risk Reduction (CBDRR), which posit that local empowerment and skill-building are foundational to community resilience ([Legowo et al., 2022](#)). The increase from a pre-test average of 47 underscores the severe initial knowledge deficit and highlights the urgent need for such interventions in similar remote communities. While the short-term results are highly positive, the long-term impact depends on the sustainability of these skills. The continued use of the provided training materials and regular refresher sessions facilitated by the local health center will be vital for maintaining this newfound capacity and ensuring the community remains disaster-ready.

This community service activity was conducted over two days—May 5 and 9, 2025—in Sintuwulemba Village, Lage District, South Poso Regency. It represents one of the implementations of the DIII Nursing Program's "Adopted Village" initiative in the form of community service. The program consisted of preparation, implementation, monitoring, and evaluation stages.

1. Preparation Phase

The initial step involved a coordination visit by the Poso DIII Nursing Program community service team to the Sintuwulemba Village Office on May 2, 2025. The team delivered an official letter and held an audience with the village head. During the meeting, the coordinator explained the primary goal of the program—to provide basic emergency management training to the local disaster

team. The rationale was presented, emphasizing the village's vulnerability to disasters. The session included an overview of the training content, which covered theory, hands-on practice, and simulation. The community service team highlighted that the training would employ a participatory approach utilizing local resources. Strong support from the village government, especially in mobilizing participants and providing facilities, was highly encouraged.

2. Implementation Phase

Before the educational sessions began, participants completed a pre-test questionnaire consisting of 15 multiple-choice questions assessing their baseline knowledge on emergency concepts, Basic Life Support (BLS), patient evacuation, and acute wound management. The average pre-test score was 47 out of 100, indicating limited understanding of emergency response. Following intensive and interactive education and demonstrations, the post-test average rose to 89, showing a significant improvement. This positive result indicates that community-based education effectively enhances preparedness and community capacity for independent emergency response.

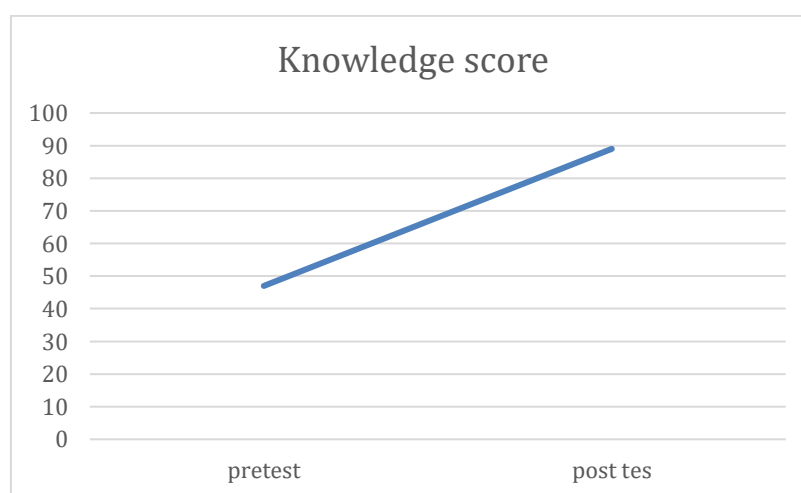


Figure 1 Participants' Knowledge Scores Before and After Education

Education & Demonstration

The first day focused on educational sessions and theoretical understanding of community emergency management.

1. Basic Life Support (BLS)

In the BLS session, participants received an in-depth understanding of the importance of early intervention in cases of respiratory or cardiac arrest, particularly in remote settings. The session introduced the DRABC scheme (Danger, Response, Airway, Breathing, Circulation) as the initial assessment and intervention steps ([Elisa Setiawati et al., 2022](#)). The facilitators demonstrated how to assess consciousness, manually open the airway, evaluate breathing, and perform chest compressions with the correct depth and ratio ([Aprilia et al., 2025](#)). The concept of hands-only CPR was introduced as a simple but effective life-saving method. The session included simulation videos, live demonstrations using training mannequins, and interactive Q&A, followed by practical sessions on the second day.



Figure 1 Giving education



Figure 3 Basic Life Support Education for Lay Responders

2. Patient Evacuation

This session equipped participants with the knowledge and strategies for safe and effective victim transport during community emergencies. Trainers emphasized the principle of ensuring both rescuer and victim safety as the top priority. Participants learned to assess situations, identify secondary hazards, determine safe evacuation routes, and assess the victim's condition. Basic evacuation techniques were introduced—from manual carries and drags to makeshift stretchers made from cloth, bamboo, or wooden boards ([Ismayadi et al., 2025](#)).

Proper victim positioning based on injury type was also covered, such as lateral positioning for unconscious victims and supine with neck support for suspected spinal injuries. The material was delivered interactively using visual aids and live demonstrations, reinforced with discussions. Studies show that non-professional first responders with basic evacuation training can significantly reduce secondary injuries in disaster victims ([Utariningsih et al., 2023](#)).



Figure 2 Victim Evacuation Education



Figure 3 Victim Evacuation Demonstration

3. Acute Wound Management

This session focused on equipping participants with basic wound care knowledge and skills relevant to community settings. Topics included wound

classification, wound hygiene, bleeding control through direct pressure, and simple wound dressing techniques using local materials. Participants were guided to practice proper cleaning methods, apply clean dressings, and identify infection signs requiring referral. The training referred to WHO's *Wound Management in Disaster Situations* (2020) and the TIME framework (Tissue, Infection, Moisture, Edge). Practical demonstrations, simulation videos, and guided exercises ensured participants mastered safe wound care steps (Sari et al., 2020).



Figure 4 Acute Wound Care Education



Figure 5 Acute Wound Care Demonstration

4. Community-Level Disaster Management

This topic aimed to build participants' understanding of their active role across all disaster management phases—from mitigation to recovery (Julian et al., 2025). The concept of Community-Based Disaster Risk Reduction (CBDRR) was introduced, supported by frameworks such as the Hyogo and Sendai Frameworks, emphasizing local participation, preparedness, and resource organization (Akbar et al., 2024). Participants also engaged in creating participatory village risk maps and initial drafts of community-based SOPs for disaster response (Teluma et al., 2023). This is in line with the Participatory Rural Appraisal (PRA) approach, which is used in developing community capacity for disaster risk management. (Rahmawati et al., 2024). The delivery method was conducted participatorily through group discussions, educational video screenings, and simple case-based simulations (Najwasyah et al., 2022). The results of the group discussions indicated that most participants had never previously engaged in a structured evacuation simulation, and this training broadened their understanding of the importance of contingency planning at the village level. At the end of the session, participants were encouraged to form a small team responsible for drafting the initial version of a community-based disaster Standard Operating Procedure (SOP) for Sintuwulemba Village as an initial step toward ensuring the sustainability of the program.

Practical and Simulation Sessions

On the second day, participants practiced all learned skills, including BLS, victim evacuation, and wound management. Scenarios such as earthquakes and floods were simulated. Participants were grouped into functional teams—evacuation, first aid, and coordination—to perform simulated response actions (Alam & Setyawan, 2022). A debriefing followed to reflect on strengths,

weaknesses, and improvements (Kerangan et al., 2022; Leutualy et al., 2023) . The activity concluded with distribution of educational leaflets for continued use.



Figure 7 BLS Simulation



Figure 6 Victim Evacuation Simulation

CONCLUSIONS AND SUGGESTIONS

The community-based emergency management training in Sintuwulemba Village successfully achieved its primary objectives. The program led to a significant enhancement of participants' capabilities, demonstrated quantitatively by a substantial increase in the average knowledge score from 47 to 89. Furthermore, direct observation confirmed the development of practical competencies in essential life-saving skills, including Basic Life Support, wound care, and victim evacuation. The active engagement of the participants and the strong collaboration with the village government were critical to the program's success. This initiative has established a vital foundation for building a more resilient, self-reliant, and disaster-ready community.

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