Utilization of Alternative Emergency Equipment in Responding Calamities; the Stories of Rescuers amidst Critical Circumstances

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ABSTRACT

Emergency personnel play a crucial and frequently heroic role during these tumultuous and perhaps fatal situations. Their ability to act swiftly can make the difference between survival and tragedy for the affected communities. This study investigated the experiences of rescuers using makeshift emergency tools in disasters and how they respond, innovate, and adjust under extreme and high-stakes situations. Using a qualitative phenomenological research design, the study involved five active rescuers was selected through purposive sampling and employed semi-structured interviews analyzed through Moustakas thematic approach. Findings revealed 8 major themes: (1) community involvement matters, (2) resourcefulness and improvisation under pressure, (3) limitation and risk of improvised equipment, (4) delayed operations, (5) psychological stress and uncertainty, (6) training and skills development, (8) teamwork and coordination, and (8) need for local government support. The study concludes that an efficient emergency response depends not only on equipment and policies but also on rescuers' ingenuity, commitment, and flexibility when they operate under duress. It is recommended that local government units should enhance rescue operations by improving support, training, and collaboration with communities and partner organizations for better disaster preparedness.

Keywords: Rescue, emergency personnel, safety, resilience, risk

INTRODUCTION

Disasters occurred naturally or were human-made. Natural disasters often happened suddenly, such as storms, flooding, earthquakes, tsunamis, and eruptions (Marshall et al., 2020). Human-made disasters were those resulting from events or situations clearly caused by mankind, such as war, armed conflict, overwhelming environmental contamination, and significant technological catastrophes. Emergency personnel played a crucial and frequently heroic role during these tumultuous and potentially fatal situations. Their ability to act swiftly made the difference between survival and tragedy for the affected communities (Arcaya et al., 2020).

Disaster preparedness and response had become an essential issue for everyone, as the incidence of natural disasters was increasing (Sheikhi et al., 2020). To prevent the loss of life and mitigate the impact of disasters, there was a need for community health volunteers (CHVs) to be prepared in emergency response, as they lived within the community and could perform certain tasks to assist residents during emergencies. However, a previous study indicated that assistance from health volunteers during disaster events was limited due to a lack of qualified staff (Kuday et al., 2023). This highlighted the need for continuous training and resource provision for both professional responders and volunteers (Heffernan et al., 2020). A well-prepared community reduced the burden of calamities on emergency agencies.

The challenging duty of saving lives, stabilizing situations, and delivering immediate relief fell on emergency responders, often under tremendous pressure, in dangerous situations, and with limited resources (Emimi et al., 2023). Because traditional gear and methods were frequently unavailable in crisis circumstances, responders were forced to improvise using homemade or alternative equipment such as gallons, ropes, plastic bottles, and foam. They frequently needed to modify protocols in response to field conditions, underscoring the significance of adaptability and improvisation in high-reliability organizations (Kutsch et al., 2025). Improvisation was a

vital adaptation to erratic and resource-constrained situations in these settings, not a sign of poor planning. Therefore, flexibility in decision-making became a crucial skill for every rescuer on the ground (Sumbal et al., 2024).

In disaster response, there was a need for individual judgment and quick decision-making, particularly when responders had to choose between following established procedures and devising creative alternatives (Launder & Penney, 2023). Alternative emergency response techniques expanded due to emerging technologies. For instance, medical supplies were delivered and impacted areas were mapped using makeshift drones and smartphone apps during the Nepal earthquake response. Even though these tools were not initially included in typical disaster response kits, they proved highly useful when conventional logistics failed (Karaman et al., 2024). This demonstrated that innovation and resourcefulness could greatly enhance disaster response capabilities.

Additionally, incorporating perspectives from community health volunteers, medical personnel, and incident commanders can provide a more comprehensive understanding of improvisation dynamics during disaster response. Each group operates under distinct responsibilities and constraints, shaping how improvisation is perceived, initiated, and managed in the field. Volunteers may emphasize adaptability at the community level, medical personnel may focus on patient safety and clinical judgment, while incident commanders may highlight coordination, risk assessment, and decision authority. Examining these diverse viewpoints allows for a more holistic analysis of improvised practices and supports the development of disaster response strategies that are context-sensitive, inclusive, and operationally effective.

This study addressed a critical gap in disaster response research by examining how rescuers improvised with available or substitute tools during high-stress, resource-limited operations, and how such practices influenced performance, safety, and decision-making. By exploring their lived experiences, the research highlighted the ingenuity, resilience, and adaptability of responders when official equipment was unavailable, emphasizing the importance of human-system interaction in tool improvisation. The findings underscored the need for more inclusive disaster management frameworks and offered valuable insights for future training, policy development, and equipment design, ultimately contributing to more effective and adaptable emergency procedures that support frontline responders in dynamic and high-risk environments.

METHODS

This study employed a qualitative research design, specifically utilizing a phenomenological approach to explore and understand the lived experiences of rescuers in utilizing alternative emergency equipment during calamities. Drawing on Moustakas' transcendental phenomenology (1994), the research focused on understanding the essence of these experiences by reflecting on and analyzing the rescuers' personal narratives. This study was conducted in one of the municipalities of Misamis Occidental, Philippines, where the participants, who were local rescuers, resided and operated. The area was a rural coastal municipality surrounded by mountain ranges and crossed by rivers, which made it vulnerable to flooding and other natural calamities, especially during the rainy season. The study focused on the lived experiences of rescuers in utilizing available and alternative emergency equipment during disaster response.

This study involved five (5) active rescuers from one of the municipalities of Misamis Occidental, Philippines, who were selected through purposive sampling. The inclusion criteria required that participants (1) were active rescuers in the locality, (2) had participated in actual disaster or emergency response operations, (3) had firsthand experience in improvising or adapting alternative equipment, and (4) were willing to voluntarily participate in the study.

The primary research instrument of this study was a semi-structured interview guide developed by the researchers to gather in-depth qualitative data. The use of an interview guide was appropriate in phenomenological research because it allowed participants to openly share their lived experiences while ensuring that the discussion remained focused on the study objectives.

To ensure validity and reliability, the interview guide underwent expert validation by professionals in the field of disaster risk reduction and management as well as qualitative research. This validation process assessed the clarity, relevance, and alignment of the questions with the study objectives. Prior to the actual data collection, the instrument was also pre-tested with one or two individuals who met the inclusion criteria but were not part of the final participants. Prior to data collection, approval was sought from the Dean of the College of Criminology, Misamis University, and formal permission was obtained from the Local Government Unit (LGU). Five (5) active rescuers were then identified using purposive sampling, based on their direct involvement in disaster response operations.

Before the interviews, participants were informed about the study's purpose, process, and their rights, and written consent was secured to ensure voluntary participation and confidentiality. Data were gathered through in-depth, one-on-one interviews using a validated researcher-made interview guide. Each participant was informed about the study's purpose, procedures, and their role in the research through an informed consent form, which they were asked to sign before participating. Participation in this study was entirely voluntary, and participants had the right to withdraw at any point without any penalty or consequence. All interviews were conducted in a safe and comfortable setting, and with the participants' permission, audio recordings were made solely for transcription purposes.

RESULTSAND DISCUSSIONS

The participants in this study consisted of five active rescuers, including both male and female members, although the majority were men. Each had been in service for more than two years, gaining substantial frontline experience in disaster response and rescue operations. Their extensive experience positioned them as credible sources of insight into the practical realities of emergency response, particularly in settings with limited resources.

Resourcefulness and Improvisation Under Pressure

Rescuers often demonstrate exceptional resourcefulness and improvisation when faced with limited or malfunctioning emergency equipment during calamities. In critical situations where standard tools are unavailable or insufficient, participants described using alternative materials and locally available resources to carry out rescue operations. This ingenuity reflects not only their adaptability but also their strong commitment to saving lives despite significant constraints (Ravazzi, 2024). The ability to modify or repurpose common items such as ropes, bamboo, makeshift stretchers, or improvised flotation devices underscores the importance of creativity and critical thinking in emergency response (Shrestha, 2023). These practices were clearly evident in the responses of the police officers interviewed in this study, illustrating how resourcefulness becomes an essential survival skill that bridges the gap between ideal preparedness and the unpredictable realities of disaster response.. These are evident in the responses of the police officers during the interview conducted:

"Clothes, shirts, or even branches of trees can also be used as improvised splints for tying. Either clothes, towels, or any cloth can be used. (R1)

"Yes, in the mountains where proper spine boards were unavailable, we had to improvise. We used bamboo, sacks, or even our own clothes to construct a spine board to carry and stabilize patients." (R2)

"We had no hydraulic tools, so we used a metal pipe and a car jack to pry the door open." (R3)

"We used a car jack and a metal pipe to open the car door. A bolo and an improvised wooden wedge also helped stabilize the vehicle." (R4)

"We used a car jack and a metal pipe to force the door open. We've integrated improvisation drills into our training." (R5)

The results were not only in line with existing literature that the ability to improvise under conditions where equipment can neither be accessed nor readily found was highly important (Babamiri & Karimiankakolaki, 2025;

Widiyawati & Lestari, 2025). But more existing studies likewise highlighted the ability to improvise and respond effectively under conditions without well-trained and well-trained responders who can think and improvise to address certain conditions to appropriately and effectively respond to conditions from readily available materials found in clothing, wood, or common tools. Such existing studies are by Ravazzi, 2024; Westman, Kurland, & Hugelius, 2024, stating that such can best respond to the conditions found in distant and disaster-torn regions. Additionally, current studies also found that current training and practice can help better respond to conditions and improve decision-making and appropriate care. Such findings to lessen operational delays quickly and improve care were found by Babamiri & Karimiankakolaki, 2025; Weber & Grasty, 2025, which can further impact appropriate care as shown by existing studies shown by Ravazzi, 2024.

Triangulating these interviews methodically with field observations, incident reports, or training data for validity and robustness would be an added value. Also, critically making an evaluation of the ethical issues and challenges to safety in improvisation equipment in an environment where such may go against existing protocols and jeopardize the safety of responders and victims would be a meaningful addition to the topic. The need for balance in such environments between adaptability and accountability, together with incorporating improvisation training in disaster preparedness and management, would thereby serve as a reminder that adapting good judgment in unfamiliar settings notwithstanding commitment to ethics and operational integrity by responders, is important. White-Lewis et al., 2022; Awad et al., 2025).

Limitations and Risk of Improvised Equipment

Improvisational emergency gear, though commonly required in low-resource situations, has major limitations which can affect the safety and efficacy of rescue missions (Miranda et al., 2025). Such substitute gear is often unstable, resulting in additional risk of injury to patients and rescuers alike during critical treatment. The application of improvised devices in emergency intervention has its key limitations and challenges, as constantly pointed out by the rescuers. Rescuer 1 underscored that responders most likely use whatever material is available at the scene, even though they might not be sturdy or perfect, provided it assists in managing the movement of the patient. Rescuer 2 expressed that the inconsistency of improvised equipment tends to result in uncertainty and self-doubt, which can cause responders to mentally freeze at key moments. Rescuer 3 noted that objects such as pipes or wood are unpredictable and tend to slip, and when used, become hazardous and cause increased distress for the patient.

Moreover, Rescuer 4 remembered one time when an impromptu lever malfunctioned during a rescue, causing a near injury to a team member, illustrating the non-durability and safety hazard of employing non-standard materials. Likewise, Rescuer 5 mentioned that improvised tools, which are flimsy and not well anchored like a wooden wedge, move unpredictably and put patients and responders at risk. These are evident in the responses of the rescuers during the interview conducted:

“You really can’t choose strong and proper materials because it depends on what’s available in the area. Even if it’s not strong, at least it still helps control the movement.” (R1)

“The main limitation is that improvised tools are not always reliable, and there’s always a chance that they might not fully support or protect the patient.” (R2)

“Improvised tools like pipes or wood aren’t strong or hard to control it can be dangerous if they slip.” (R3)

“The biggest challenge is the lack of strength or durability of the improvised tools. the improvised lever we were using broke and almost hit one of the rescuers.” (R4)

“The problem lies in the strength and reliability of improvised tools. If you're using wood or ordinary metal, it can easily break or slip, making it more dangerous.” (R5)

Improvisational emergency devices, though frequently required in low-resource or high-stress environments, are fraught with major limitations and hazards threatening the safety and efficacy of rescue efforts (Howe et al., 2025; Mao et al., 2025). One of the main limitations is the mechanical vulnerability of improvised tools, like

wooden boards, tubes, or fabric-based splints, which were never intended for medical or rescue applications (Howe et al., 2025; Liu et al., 2024). These materials can fracture, slip, or collapse under pressure, posing greater risk of additional injury to patients or damage to responders (Howe et al., 2025; Liu et al., 2024). Improper support and stability in the make-do tool may result in poor immobilization, patient discomfort, and transportation difficulties, particularly with fractures or spinal injuries (Howe et al., 2025; Mao et al., 2025). In addition, the application of substandard equipment tends to result in rescue delays since responders have to go more slowly and take additional time to stabilize both the patient and the instrument itself (Howe et al., 2025; Mao et al., 2025). Such delays can be the difference between life and death (Howe et al., 2025; Liu et al., 2024). Apart from physical dangers, psychological effects on rescuers are significant as well; dealing with poor tools fosters doubt, second-guessing, and higher stress, which can influence decision-making and performance (Liu et al., 2024; Mao et al., 2025). Overall, even though improvisation is a required capability in response to emergencies, dependency on improvised tools holds real risks, highlighting the imperative for the proper supply of standard equipment and specialized training in safe improvisation skills (Howe et al., 2025; Mao et al., 2025).

The limitations and risks of improvised emergency equipment have significant policy and practice implications for disaster and emergency response (Qiu et al., 2024; Korpela & Nordquist, 2024). Foremost, they underscore the need for long-overdue greater investment in procuring and maintaining standard rescue equipment to have available dependable and safe equipment that responders can rely on in the event of emergencies (Qiu et al., 2024; Korpela & Nordquist, 2024). Without this, responders are compelled to use improvised materials that will weaken patient safety and stretch out rescue times (Qiu et al., 2024; Korpela & Nordquist, 2024). Also, these issues highlight the need for incorporating integrated training programs that not only emphasize working with standard equipment but also incorporate safe improvisation strategies, allowing rescuers to improvise effectively when resources become limited (Qiu et al., 2024; Korpela & Nordquist, 2024). Psychologically, equipping responders with the right tools and training can diminish stress and indecision, enhancing their confidence and decision-making during critical situations (Qiu et al., 2024; Korpela & Nordquist, 2024). On a larger level, these repercussions necessitate increased cooperation among local governments, emergency organizations, and community groups to create mechanisms that improve resource availability, preparedness, and responder support, which in turn will result in more effective and safer emergency responses (Qiu et al., 2024; Korpela & Nordquist, 2024).

Delayed Rescue Operations

Rescue operations usually get delayed due to the necessity of improvising with poor or incomplete equipment (Sumbal et al., 2024). Delays like these may heighten the risk of additional injury to patients and compound pressure on responders operating under stressful conditions. The absence of the right equipment has a major contribution to the effectiveness and safety of rescue, in many cases making it riskier and more stressful for both patients and rescuers. When responders have to use improvised equipment, e.g., metal bars in place of hydraulic cutters or wood and common metal alternatives, the rescue is less effective and more laborious. These materials improvised by responders may be unreliable, breakable, or slippery, adding to the risk and prolonging the procedure even more. Not only does the longer time taken to finish rescue operations under such circumstances raise stress levels, but also additional care is needed to ensure that the patient's situation is not exacerbated. In general, the lack of proper equipment tests responders to find a balance between speed and safety in high-stress situations. These are evident in the responses of the rescuers during the interview conducted:

“The lack of proper equipment makes rescues riskier and more stressful. Sometimes, we are forced to improvise, which slows us down and requires extra care to avoid harming the patient further.” (R2)

“Without the proper tools, I notice that the rescue usually takes much longer than expected, and it makes the situation more stressful for both us responders and the patient.” (R3)

“Using a metal bar instead of a hydraulic cutter makes the process harder and slower.” (R4)

“Sometimes, the problem lies in the strength and reliability of improvised tools. If you're using wood or ordinary metal, it can easily break or slip, making it more dangerous. It can really delay the operation.” (R5)

These makeshift tools are often unstable, fragile, or slippery, further elevating risk and prolonging rescue procedures (Roud, 2021; Ricci et al., 2024).Consistent with existing literature, the use of improvised equipment contributes to extended rescue times, as responders must operate more cautiously to avoid exacerbating injuries or causing additional harm (Korpela & Nordquist, 2024; Qiu et al., 2024). Prolonged entrapment or delayed extraction may worsen victims' conditions, increasing the likelihood of complications or mortality (Farokhzadian et al., 2024; Masbi et al., 2024). For responders, working under such constraints heightens psychological stress and may impair decision-making, thereby increasing the risk of injury to both rescuers and patients. These findings underscore the critical importance of having appropriate, well-maintained equipment readily available to support timely and safe rescue operations (Ricci et al., 2024; Qiu et al., 2024).

From a methodological standpoint, triangulating interview data with field observations, incident reports, or training records would enhance the credibility of these findings by corroborating responders' accounts of equipment-related delays and operational challenges. Furthermore, the discussion can be strengthened by critically examining the ethical and safety dilemmas associated with the use of improvised equipment, particularly in situations where improvisation conflicts with established protocols or standards of care. Such dilemmas compel responders to balance urgency against safety and professional responsibility, highlighting the need for clear guidelines and training that integrate both standard procedures and evidence-based improvisation strategies. Addressing these issues through sustained investment in equipment, regular maintenance, and comprehensive training programs can improve responder preparedness, enhance patient safety, and ultimately strengthen the effectiveness of emergency response systems.

Psychological Stress and Uncertainty

Psychological uncertainty and stress are frequent issues among rescuers in emergency operations, particularly when confronted with life-or-death situations and paucity of resources (Radford, 2024). These mental and emotional stresses tend to be generated by the unpredictability of events, inadequate equipment, and the critical situation of furnishing immediate treatment. The accounts of the rescuers disclose the extreme psychological tension and ambiguity they encounter in emergency missions, especially when resources are scarce or situations are unforeseen.

Rescuer 1 identifies how anxiety and panic are instinctive early responses, emotional reactions differing from one person to another based on experience and capacity to remain calm. Rescuer 2 recounts instances when their mind turned blank under the pressure and danger of employing makeshift tools, causing second-guessing and self-doubt about whether the actions were contributing or aggravating the situation. In the same vein, Rescuer 3 highlights greater stress and time lags occasioned by faulty makeshift equipment, which not only risked the patient's life but also emotionally taxed the rescuers themselves. Yet, with constant exposure, this rescuer developed the psychological readiness and learned to be adaptable under duress. Rescuer 5 also remembers initial apprehension when required to work with improvised tools, recounting a particular instance where tool failure instilled panic among the team. Notwithstanding these obstacles, the rescuer emphasizes the need for adaptability, presence of mind, and safety first in managing pressure and staying in control amidst turbulent situations. Together, these accounts demonstrate that although psychological stress and uncertainty are unavoidable in emergency response, they can be controlled by experience, mental toughness, collaboration, and good training in both conventional and improvised rescue techniques. These are evident in the responses of the rescuers during the interview conducted:

"As a rescuer, at first there's always nervousness. Sometimes we still get rattled or panic depending on what's happening. You can see the difference between responders who panic and those who don't." (R1)

"Sometimes my mind even went blank because it felt very risky. There were times when we felt uncertain and even went blank during operations because the improvised tools made us doubt whether we were really helping or making things worse." (R2)

"Without the proper tools, I notice that the rescue usually takes much longer than expected, and it makes the situation more stressful for both us responders and the patient. Now I'm mentally more prepared. I don't rely only on standard tools." (R3)

"At first, we were anxious. Sometimes, the problem lies in the strength and reliability of improvised tools. If you're using wood or ordinary metal, it can easily break or slip, making it more dangerous." (R5)

Stress and uncertainty in the realm of emergency response work and the exacerbation of these factors due to high stakes, resource constraint management, and the need to produce rapid and sustainable decisions in order to sustain life (Khazaei et al., 2024; Wild et al., 2020). First responders work in situations with high levels of emotional exposure in which the lack of normal equipment requires the use of improvisation and incurs increased levels of anxiety and self-doubt in order to avoid exacerbating the condition of the patients. The lack of reliability due to improvisation incurs added delays and leads to increasing levels of mental stress due to ongoing evaluation of the safety of improvised equipment in addition to the need to assess the condition of the patients (Khazaei et al., 2024; Wild et al., 2020).

As per the study of emergency response and disaster psychology, first responders in resource-scarce and unpredictable scenarios usually feel high levels of stress, anxiety, and emotional exhaustion (Mao et al., 2025; Jacobs & Keegan, 2022). Also, insufficient resources, high time pressure, and the risk of making irreversible mistakes are the main causes of cognitive fatigue and emotional suffering (Giostra et al., 2024; Wild et al., 2020). Prolonged exposure to such stressful situations, and especially without regular psychological assistance, are known to cause burnout, loss of judgment, and impaired decision-making, which eventually influence first responder safety and patient outcomes (Mao et al., 2025; Giostra et al., 2024). However, through exposure, experience, and help, first responders can build up mental resilience, which helps them stay level-headed in chaotic scenarios (Khazaei et al., 2024).

In regard to methodology, the integration of findings from interviews with data generated from field observations, incidents, or training would greatly help in establishing the credibility of these results by validating personal experiences regarding stress and uncertainty against operational data. In addition, an investigation by Jeske et al. regarding the role of improvisation in professional work, in relation to specific equipment, would enable an exploration of the ethics and operational conundrums posed by the use of improvised equipment, especially in cases where improvisation violates official protocols or standards of care. These conundrums create a predicament for these professionals, who find themselves in very difficult decision-making situations, especially considering the pressures of time, patient care, as well as professional integrity. Collectively, these results emphasize the need for a unified approach in intervention efforts that include regular psychological evaluations, resilience-building activities, provision of equipment, and scenario-based training that encompasses stress management and ethics. Psychological stress and uncertainty need to be prioritized in order for responders not only to function effectively but also for them to carry out safe and ethical ways of dealing with emergencies (Al Salem et al., 2024; Jones et al., 2024; Romero-Cabrera et al., 2024).

Training and Skills Development

Training and skill development are critical in preparing rescuers to respond effectively to emergencies, particularly in contexts characterized by limited resources and unpredictable conditions (Queiroz et al., 2024). Continuous education and hands-on training equip responders with the technical knowledge, confidence, and adaptability required to deliver safe and effective care under pressure. Participants in this study emphasized that structured training reduces reliance on guesswork during emergencies and enables the correct application of first aid, even when responders are compelled to use improvised or substitute tools. One rescuer highlighted that prior training provided clear guidance for decision-making, while another emphasized that practicing with alternative materials enhanced their ability to adapt rapidly to diverse and challenging rescue environments. Scenario-based exercises that integrate both standard procedures and improvisation techniques were identified as particularly effective in fostering practical competence and confidence, while also offering low-cost and accessible training solutions. These are evident in the responses of the rescuers during the interview conducted:

"Our trainings really helped a lot. Without them, we would just be guessing what to do. Listening carefully to our trainers gave us the skills to apply first aid correctly, even with improvised tools." (R2)

"We now make it a point to include training sessions where we practice using basic materials as alternatives to standard rescue equipment. These kinds of trainings are very useful because they teach us to be resourceful and to adapt quickly, no matter what the circumstances are." (R3)

"Yes, during our training, we conduct scenario-based drills where we are taught how to use available materials also including improvisation techniques." (R4)

These findings are consistent with existing literature, which underscores the importance of routine, scenario-based training in strengthening responders' capacity to function effectively when standard equipment is unavailable (Pongtriang et al., 2024; Roud, 2021). Training that incorporates improvisation skills and the use of readily available materials promotes flexibility, critical thinking, and sound judgment, enabling responders to provide appropriate patient care in resource-constrained settings. Repeated practice further enhances decision-making abilities and emotional composure, reducing uncertainty and psychological stress during real-world emergencies (Pongtriang et al., 2024; Roud, 2021). Additionally, affordable and accessible training programs help ensure preparedness across different responder levels, contributing to improved overall emergency response outcomes.

From a methodological standpoint, triangulating interview data with field observations, incident reports, or training records would enhance the credibility of these findings by verifying the relationship between training exposure and responder performance in actual rescue situations. Such triangulation would allow for a more objective assessment of how training translates into practice, particularly in high-pressure contexts involving improvised equipment. Furthermore, the discussion can be strengthened by critically examining the ethical and safety dilemmas associated with improvisation training, especially where improvised practices may conflict with established protocols or standards of care. Addressing these dilemmas is essential to ensure that improvisation remains a controlled, evidence-based response rather than a source of unintended harm.

At the policy and system level, prioritizing continuous, scenario-based training has significant implications for strengthening emergency response capacity (Alinier & Sonesson, 2025; Rosen et al., 2023). Investment in comprehensive skill development programs ensures that responders are proficient not only in routine procedures but also in safe, ethically sound improvisation when resources are limited (Bahattab et al., 2024; McLennan et al., 2024). Such investments enhance responder confidence, reduce psychological stress, and improve patient outcomes, ultimately contributing to the development of resilient emergency response systems and safer communities.

Teamwork and Coordination

Coordination and teamwork are crucial in guaranteeing the success and safety of emergency response missions (Landon, L. B. 2025). By working together, effective communications, and mutual responsibilities, rescuers can overcome difficulties and administer timely, life-saving interventions even under high-stress environments. The answers of the rescuers in aggregate underscore the essential contribution of teamwork and coordination to the resolution of the challenges of emergency response. Rescuer 1 highlights the need for an organized team with a defined chain of command in which a designated authority gives orders and guides the course of response to ensure coordinated action. Rescuer 2 emphasizes that team work, accompanied by innovativeness, enables the team to remain calm and improvise whenever conventional equipment is not available, enabling safe patient handling regardless of equipment availability. Rescuer 3 further qualifies that careful planning and proper role allocation among members are particularly critical when there is a lack of equipment since it is mostly through teamwork and training those operations become successful. Rescuer 4 reports that teaming confidence and safety, especially with the use of makeshift equipment, is promoted because the team reinforces one another via rotation of tasks and material reliability checks. Likewise, Rescuer 5 observes that coordination among the team, such as responders' rotation and calling for assistance when required, ensures operational continuity and safety of the deployment area. Together, these findings demonstrate that efficient team effort not only makes up for the absence of equipment but also enhances decision-making, risk control, and overall effectiveness in rescue operations. These are evident in the responses of the rescuers during the interview conducted:

"As a responder, teamwork is really important. In the team, there's always a commander who gives instructions, decides what should be done, and directs the flow of the response." (R1)

"We adjust by relying on teamwork and creativity. Teamwork is also important, because coordinating with each other lessens the risk." (R2)

"We plan carefully, check if the tool is safe to use, and make sure every team member knows their role. Many times, especially when equipment is lacking, it's teamwork and training that save the day." (R3)

"However, due to our experience and teamwork, we were able to build the confidence that even improvised tools if used properly can still be safe and effective. To address such issues, we now double-check the stability of tools, rotate responders to prevent fatigue, and rely on teamwork to support each other in case a tool fails." (R4)

"We now implement team rotation, double-check the stability of our tools, and when necessary, we request backup from other teams." (R5)

Teamwork and collaboration are crucial elements in emergency response, especially in high-pressure settings where time, creativity, and safety are key (Bearman et al., 2023; Esmaeili et al., 2025). Sometimes, in high-pressure settings, field success can also rely on how well team members communicate and work in unison, ensuring each team member knows their part and plays by the same rules of command (Gooding et al., 2022; Parry et al., 2023). Teamwork can also make an important difference when there is no standard equipment available in an environment, reducing any risk associated with patient care as well as team Care Providers (Bearman et al., 2023; Esmaeili et al., 2025). Also, team rotation for reducing team fatigue, tools' safety, as well as sending for backup help if needed increase field success and effectiveness in care delivery (Parry et al., 2023; Gooding et al., 2022). Further, an effective team can anticipate each action, stay calm in high-pressure settings, and work in an action-oriented manner, thus promoting quality and success in patient care and treatment (Parry et al., 2023; Gooding et al., 2022).

Methodologically, a combination of the findings from the interviews with the findings from observations, incidents, or training data could increase the validity of these conclusions by offering multiple lines of evidence about the role of teamwork and coordination. On the other hand, the exploratory analysis of the identified dilemmas and issues related to the interaction between team work, equipment, and improvisation would add value to the conversation by sheding light on scenarios where team and equipment coordination becomes a challenge between the importance of the operations and the safety requirements. These findings verify the importance of scenario-based training for teams, a strong leadership system, as well as collaboration between different agencies to optimize team and equipment cooperation and ensure more efficient and morally appropriate responses to emergency scenarios (Bearman et al., 2023; Esmaeili et al., 2025; Parry et al., 2023).

Need for Local Government Support

Local government assistance is central to making disaster response efforts more effective (Cvetković et al., 2021). With the proper funding, equipment, and training from local governments, responders are better able to provide timely and safe emergency treatment. Rescuers also stressed the importance of local government in enhancing disaster response capacity. One of the recommendations is for local disaster risk reduction offices to give more sophisticated and specialized training, as mere basic training might not be enough in addressing multi-layered emergencies. There is also a pressing call for support at the community level, particularly in providing grassroots responders with basic rescue equipment, which is typically missing in actual operations. Another crucial observation is the need to incorporate improvisation training in regular exercises and have current inventories of equipment on hand in various locations so that teams can act with greater ease during resource-scarce scenarios. Additionally, equipping all barangays with basic rescue kits and promoting the documentation and exchange of best practices are viewed as practical measures to overcome resource deficiencies and mitigate response delays. These are evident in the responses of the rescuers during the interview conducted:

"My recommendation is for the MDRRMO and MDRRMC to provide more trainings advanced trainings, because there are different types." (R1)

"My recommendation is to integrate improvisation training into regular drills and to establish equipment inventories per area, so responders will know where to seek additional tools or assistance when needed." (R4)

"The local government should provide basic rescue kits for each barangay. Sometimes, the lack of tools is the reason why response time is delayed. I recommend conducting regular team-based improvisation training and documenting best practices so they can be shared with others." (R5)

Support from the local government is an important aspect that can ensure appropriate and swift disaster response, especially in settings that lack equipment and training capacities. Often, disaster responders face problems like insufficient rescue equipment, slow distribution channels, and limited access to formal training, which can pose risks to both patients and disaster responders alike and can be addressed by ad hoc measures. Keeping up-to-date inventories of necessary equipment and simulation training sessions at the barangay level and providing equipment kits at the barangay level can be useful steps that can improve capacities and efficiencies of disaster response teams.

From the methodological point of view, integrating findings from interviews with information gathered through observation, incident reports, and/or training sessions could strengthen the credibility of such information by forming a well-rounded body of evidence of the effectiveness of interventions by the local government in improving the performance of the responders and patient outcomes. As part of validating findings, it would also help in gaining insight into the relationship between training and the application of improvisations in emergency situations. Moreover, the consideration of ethical, security, and safety conundrums, especially in situations where improvisations are used because of the lack of standard equipment, would enrich this discussion by pointing out to the need to address operational needs under standardized safety parameters. Proactive collaboration by local governments not only lends towards improving the technical capability of crisis response teams but also instills resilience in terms of safety, security, and collective preparedness, thereby reducing response time in situations of disasters.

Community Involvement Matters

These answers underscore the importance of community assistance in emergency response. Engaging bystanders and standby members can help greatly facilitate the provision of first aid and enhance the overall performance of rescue efforts **(**Olorunfemi et al., 2024**).** Second, incorporating community assistance into formal frameworks such as through local government provision of basic rescue equipment and organized training ensures that grassroots rescuers are more empowered and educated. Having definite systems for resources availability and support enhances the ability of the community to respond quickly and effectively in times of emergency. These answers underscore the vital importance of community support in emergency response. Engaging bystanders and standby members can greatly facilitate the provision of first aid and enhance the overall efficiency of rescue efforts. Moreover, merging community support with formal systems through, for example, government provision of rudimentary rescue equipment and systematic training ensures that grassroots responders are better prepared and equipped. Having well-defined mechanisms for resource availability and support also supports the community's ability to react quickly and effectively in the event of emergencies. These are evident in the responses of the rescuers during the interview conducted:

"Sometimes you also think of asking for help from standby people or bystanders around the area. You can request their help so your delivery of first aid service becomes easier and more effective." (R1)

"There should be more community or local government support to provide even basic rescue tools for grassroots responders." (R4)

Community participation is also crucial to heighten the efficiency of emergency response operations (Lumabi et al., 2025; Pasamonte, 2025). Involving bystanders and standby individuals in the scene can give instant support, hastening the performance of first aid (Guingab et al., 2025; Cruz, 2022). This cooperative strategy not only fills the gaps of trained responders but also serves to handle situations with scarce resources or personnel (Grabmaier et al., 2025; Lumabi et al., 2025). In addition, institutional support in the form of local government programs such as provision of basic rescue equipment and incorporation of citizens into routine training exercises enhances

the collective readiness of grassroots responders (Pasamonte, 2025; Guingab et al., 2025). Setting up equipment lists and open lines of communication ensures that responders are aware of where to find more resources when necessary, building a stronger, more integrated emergency response system (Cruz, 2022; Grabmaier et al., 2025). These collaborative efforts prove that active community engagement is crucial in minimizing response time, enhancing patient outcomes, and instilling a culture of readiness (Lumabi et al., 2025; Pasamonte, 2025).

Literature repeatedly reiterates the essential role played by community participation in a successful disaster response and emergency management (Guingab et al., 2025; Cruz, 2022). Research emphasizes that local residents' and bystanders' active participation, as well as that of grassroots associations, improves short-term response capacity, particularly in low-resource environments (Grabmaier et al., 2025; Lumabi et al., 2025). Community residents can administer vital first aid, facilitate evacuation, and augment professional responders, thus decreasing response times and the overall outcome (Pasamonte, 2025; Guingab et al., 2025).

The implications of prioritizing community engagement in responding to disasters are profound for policy and practice alike (Grabmaier et al., 2025; Lumabi et al., 2025). It demands mobilizing active participation from community residents and bystanders through investment in community education, training, and awareness initiatives to bring them up to speed in the skills required in emergencies (Pasamonte, 2025; Guingab et al., 2025). It also underscores the need for local governments to engage with and build symbiotic relationships with communities through the provision of resources, creating communication channels, and empowering grassroots organizations (Cruz, 2022; Grabmaier et al., 2025).

CONCLUSION

The research confirms that rescuers from one of the municipalities of Misamis Occidental, Philippines, are ever resourceful, always able to improvise, work together in teams, and persevere in the face of meager equipment and backup. Their experiences map out the ways in which creativity, cooperation, and community action become lifelines during crises. Meanwhile, the testimonies emphasize resource and training deficits that will hamper rescue efforts if not remedied. All in all, the research confirms that an efficient emergency response depends not only on equipment and policies but also on rescuers' ingenuity, commitment, and flexibility when they operate under duress.

RECOMMENDATION

According to the findings, local government units are recommended to intensify logistical and fiscal support for rescue activities through provision of adequate equipment and recurrent training involving improvisation exercises. Rescue teams should continue to foster collaboration and community involvement to improve coordination responses in emergencies. In addition, collaborations with non-governmental organizations, academic institutions, and private players can augment resources and establish long-term support systems for disaster preparedness. Incorporating resourcefulness, flexibility, and ongoing learning into formal training programs will guarantee that rescuers are thoroughly equipped to respond well, even under resources-limited and high-stress environments.

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