

Competency of Municipal Disaster Risk Reduction Management Emergency Responders (MDRRMER) in the 5th District of Camarines Sur

Hazel O. De Vera, RN

University of Saint Anthony

DOI: <https://doi.org/10.47772/IJRISS.2026.100600989>

Received: 17 June 2026; Accepted: 22 June 2026; Published: 10 July 2026

ABSTRACT

Trauma, a major public health issue, refers to physical injuries resulting from external force, accidents, or violence, often requiring urgent and complex medical intervention to ensure survival and recovery. This study assessed the trauma management competency of MDRRMER in the 5th District of Camarines Sur. A descriptive-correlational design was employed, utilizing a validated questionnaire checklist administered to all 110 MDRRMER from the municipalities of Baao, Balatan, Bato, Buhi, Bula, and Nabua through total enumeration. Descriptive statistics (frequency, percentage, weighted mean, ranking) and Chi-square tests were utilized to summarize the profile and significant relationship between the demographic profile and the level of core competency.

Findings showed that the largest group of the respondents were aged 25-29 years old, male, and college graduates. Most had 1-3 years of experience in emergency response and received Basic Life Support training related to trauma management. Overall, MDRRMER were very competent in risk assessment and planning, capacity building and training, operations and response coordination, and public awareness and communication, while logistics and financial management were rated competent. Statistical tests showed no significant link between sex and educational attainment and the level of core competency, but age, years of experience, and training received were significantly related. Based on identified gaps such as the shortage of trauma supplies and medical equipment during emergencies, an Enhanced Trauma Management and Disaster Operations Training Program was proposed to strengthen the trauma care capabilities and operational readiness of MDRRMER.

Keywords: Trauma Management, Municipal Disaster Risk Reduction Management Emergency Responders, Competency

INTRODUCTION

Trauma, a major public health issue, refers to physical injuries resulting from external force, accidents, or violence, often requiring urgent and complex medical intervention to ensure survival and recovery. These injuries range from minor wounds to life-threatening conditions and often involve multiple organ systems, demanding prompt, systematic assessment and coordinated care by emergency practitioners. The global rise in traumatic incidents has reinforced the significance of effective trauma management as a cornerstone of emergency medicine.

Globally, trauma remains a critical public health problem, contributing to 4.4 million deaths each year and constituting nearly 8% of all deaths (World Health Organization, 2024). Among individuals aged 5 to 29 years, road traffic injuries, homicide, and suicide are three of the top five causes of death, importance the disproportionate impact of trauma on younger populations. Beyond mortality, tens of millions more suffer non-fatal physical injuries requiring significant emergency department care, hospitalizations, and long-term rehabilitation. Emergency responders are central in mitigating these outcomes, as their capabilities in rapid field

assessment, stabilization, and life-saving intervention have a direct effect on improving survival and reducing long-term disability worldwide (Delaney, P. et al., 2024).

Training and simulation-based education for disaster risk reduction management emergency responders have shown measurable benefits for trauma management effectiveness. Tang, et al., (2024) highlights that scenario-based exercises, computer-supported simulations, and structured post-incident debriefings improve both technical and non-technical skills such as decision-making and interprofessional communication critical during trauma emergencies. In addition, a World Health Organization (WHO) supported training held in Istanbul, Türkiye, in July 2024 exposed emergency responders from 11 countries to immersive simulation exercises, improving coordination, planning, and information management as they navigated complex public health emergency scenarios.

In the Philippines, trauma is a persistent challenge, particularly due to frequent natural disasters and a high rate of accident-related injuries. Nationwide efforts include the integration of emergency medical services and disaster response through the National Disaster Risk Reduction and Management Council (NDRRMC), which develops and implements standardized protocols for pre-hospital trauma intervention, mass casualty management, and continuous improvement of responder skills.

The primary legal framework for disaster preparedness and emergency response in the Philippines is Republic Act (RA) No. 10121, otherwise known as the Philippine Disaster Risk Reduction and Management Act of 2010. This legislation institutionalizes a comprehensive system for disaster management and mandates standardized emergency response protocols nationwide. Specifically, Section 12 of RA 10121 requires the establishment of a Local Disaster Risk Reduction and Management Office (LDRRMO) in every province, city, and municipality. Under this section, the Municipal DRRM Office (MDRRMO) is explicitly tasked to organize, train, equip, and directly supervise local emergency response teams, thereby establishing the legal imperative for ensuring and continuously assessing the competency of MDRRMER. This foundational mandate is further operationalized by the National Disaster Risk Reduction and Management Plan (NDRRMP) 2020-2030, adopted in October 2020. The NDRRMP links disaster risk reduction to climate change adaptation and human security, providing strategic direction to strengthen the capacities of local agencies and responders in delivering coordinated interventions, including advanced trauma care and emergency medical management.

The Bicol Region, particularly in Camarines Sur, faces a high burden of trauma-related injuries, with trauma-causing events such as road traffic accidents and fireworks-related injuries disproportionately affecting the population. In Camarines Sur alone, trauma-related emergencies remain a significant concern, with 1,921 road mishaps recorded from January 1 to May 15, 2024, many involving motorcycles and occurring in municipalities such as Pili, Iriga, and Tigaon (GMA Network, 2024). Additionally, fireworks- or firecracker-related injuries in the province contributed to the regional tally of 61 cases during the 2024–2025 Yuletide period, underscoring the persistent risk of preventable traumatic injury among residents (Philippine News Agency, 2025).

A 2025 assessment revealed that Camarines Sur's emergency responders demonstrated strong commitment and readiness for disaster response, yet the study emphasized the ongoing need for enhanced technical training, regular skills drills, and standardized trauma protocols to ensure consistent competency levels across all municipalities. The Provincial Government's Environment, Disaster Management, and Emergency Response Office (EDMERO) have initiated capacity-building programs to address these competency challenges, conducting specialized training for responders in coordination with national agencies and focusing on improving emergency medical intervention skills during trauma and disaster operations.

To systematically address these challenges, it is imperative to define what comprises competency of MDRRMO. While clinical medical skills are vital, the effectiveness of a trauma response team relies heavily on a broader organizational and structural framework. In this study, trauma management competency is defined by areas: (a) Risk Assessment and Planning, which ensures readiness for potential mass-casualty and localized trauma events; (b) Capacity Building and Training, which guarantees responders are continuously updated on life-saving skills;

(c) Operations and Response Coordination, which dictates the efficiency of deployment and multi-agency teamwork during emergencies; (d) Public Awareness and Communication, which facilitates community preparedness and clear incident reporting; and (e) Logistics and Financial Management, which ensures the availability and maintenance of vital medical equipment, ambulances, and response funds.

As an emergency room nurse, the researcher directly observed critical gaps in trauma management competency among MDRRMO responders, particularly in conducting systematic primary surveys, ensuring effective airway management, controlling external hemorrhage, recognizing and managing shock, applying proper spinal immobilization, and stabilizing patients prior to transport. These deficiencies translate into inconsistent and sometimes suboptimal trauma care delivery in prehospital settings, potentially compromising patient outcomes. Consequently, there is a compelling need to formally assess their current level of competence and to design focused, evidence-based training interventions to strengthen trauma response capabilities in the 5th District of Camarines Sur.

METHODOLOGY

The researcher utilized the descriptive-correlational method using a questionnaire checklist as the data-gathering instrument. The study was conducted in the 5th Congressional District of Camarines Sur, one of the five congressional districts in the province. The researcher employed the purposive sampling technique to select the respondents for this study, specifically focusing on emergency responders from the Disaster Risk Reduction and Management Offices (DRRMOs) within the 5th District of Camarines Sur. The researcher utilized the total enumeration method for the MDRRMO emergency responders to obtain comprehensive data from the target population. The respondents of the study were 110 emergency responders from the Municipal Disaster Risk Reduction and Management Offices (MDRRMOs) of Baao, Balatan, Bato, Buhi, Bula, and Nabua in the 5th District of Camarines Sur.

The data collection questionnaire was utilized, consisting of a questionnaire checklist as the primary data gathering tool. In the process of gathering data, the researcher developed a structured questionnaire by thoroughly reviewing pertinent studies and literature related to trauma management and disaster response. The questionnaire that was created for this study underwent a comprehensive validation process to ensure face and content validity. The internal consistency of the instrument was subsequently tested using Cronbach's Alpha, and the computed coefficient of 0.83 confirmed that the instrument demonstrated good reliability for assessing the competency of MDRRM emergency responders. The distribution and retrieval of the questionnaire were conducted manually, utilizing printed copies that were personally delivered to a predetermined list of respondents in the MDRRMO.

The researcher used some tools to treat the data that were gathered. In this research study, the analysis involved the calculation of percentages and rankings. Frequency was calculated to analyze the demographic profile of the respondents. The Weighted Mean was employed as a statistical tool to assess and quantify the level of trauma management competency among the respondents and challenges are encountered by disaster risk reduction management emergency responders in delivering trauma management care. This test examined the connection between the demographic profile of the respondents and the level of trauma management competency among disaster risk reduction management emergency responders.

RESULTS AND DISCUSSION

Profile of the Respondents

Age. Table 1 presents the age profile of the MDRRMER in the 5th District of Camarines Sur. Out of 110 respondents, the largest group was aged 25–29 years old with 35 or 31.82%, followed by those aged 35–39 years old with 29 or 26.36%. Smaller proportions were observed among those aged 30–34 years old with 16 or 14.55%, those aged 45 years old and above with 14 or 12.73%, those aged 40–44 years old with 9 or 8.18%, and those aged less than 25 years old with only 7 or 6.36%. This age profile suggests that the emergency responder

workforce are predominantly composed of young to middle-aged adults, who generally possess the physical stamina, agility, and quick decision-making skills required for the rigorous, high stress demands of trauma management and disaster response operations.

The high concentration of young to middle-aged adults serving as emergency responders highlights the critical need for peak physical stamina, agility, and mental resilience in disaster management and trauma care. Emergency response is an inherently strenuous profession that requires lifting patients, navigating hazardous environments, and working long hours under extreme pressure. Having a predominantly younger workforce implies that the municipal units are well-equipped with the physical vitality necessary for rapid frontline deployment.

A concept analysis of trauma nursing competency in emergency departments by Baik et al. (2024) highlighted that trauma care demands rapid initial assessment, priority setting based on severity, and effective interprofessional teamwork, competencies that are often cultivated among relatively younger emergency staff through structured training and practice. In the 5th District of Camarines Sur, provincial and municipal training programs such as tactical emergency casualty care and emergency medical services courses in Camarines Sur have actively targeted local responders to strengthen trauma management skills, further reinforcing the development of a young yet technically capable emergency workforce in the province (Olea et al, 2025).

Sex. Table 1 presents the sex profile of the MDRRMER in the 5th District of Camarines Sur. Out of 110 respondents, the majority are males, comprising 86 or 78.18% of the total workforce, while females account for only 24 or 21.82%. This profile clearly shows that MDRRMER in the district is a male-dominated workforce, with almost four out of every five responders being men. Such distribution reflects the traditional pattern in emergency and uniformed services where physically demanding, high-risk response roles are still largely occupied by males.

The marked predominance of male MDRRMER suggests that emergency response and trauma management in the district is still shaped by gendered role expectations, where men are more frequently recruited, deployed, or encouraged to participate in front-line disaster and emergency operations.

A recent qualitative study conducted by Makkink and Nkhoma (2025) exploring the experiences of female paramedics found that emergency medical services remain heavily male-dominated, with women frequently facing gender stereotypes based on perceived physical limitations, which ultimately limits their career advancement and participation in the field. To support the study of Makkink and Nkhoma, Caponnetto et al. (2026), in a cross-sectional study evaluating occupational stress among emergency medical service drivers, noted that the workforce is overwhelmingly male (76.7%), underscoring the persistent gender disparity in the profession globally and emphasizing the need for targeted, gender-inclusive organizational interventions to support a diverse and resilient emergency response team.

Educational Qualification. Table 1 presents the educational qualification profile of the MDRRMER in the 5th District of Camarines Sur. Out of 110 respondents, the majority were college graduates with 56 or 50.91%, followed by college undergraduates with 27 or 24.55%. A notable proportion had completed a vocational/technical course with 23 or 20.91%, while a minimal fraction pursued advanced studies, with doctorate (with units) and doctorate graduates each comprising only 2 respondents or 1.82%. This distribution shows that more than half of the MDRRMER have completed a baccalaureate degree, while a substantial proportion have at least some college or technical-vocational education, indicating that the emergency response

Table 1 Profile of the Respondents		
Profile	Frequency	Percentage
Age		
25 -29 y/o	35	31.82
35 – 39 y/o	29	26.36
30 -34 y/o	16	14.55

45 y/o and above	14	12.73
40 – 44 y/o	9	8.18
less than 25 y/o	7	6.36
TOTAL	110	100.00
Sex		
Male	86	78.18
Female	24	21.82
TOTAL	110	100.00
Educational Qualification		
College Graduate	56	50.91
College Undergraduate	27	24.55
Vocational/Technical Course	23	20.91
Doctorate (with units)	2	1.82
Doctorate Graduate	2	1.82
TOTAL	110	100.00
Years of experience in emergency response		
1–3 years	43	39.09
4 - 6 years	26	23.64
Less than 1 year	25	22.73
More than 6 years	16	14.55
TOTAL	110	100.00
Training received related to trauma management		
Basic Life Support (BLS)	110	100.00
First Aid and Trauma Care	77	70.00
Advanced Cardiac Life Support (ACLS)	37	33.64
Mass Casualty Management (MCM)	36	32.73
Crisis Intervention Training	17	15.45
Water Search and Rescue (WASAR)	10	9.09
TOTAL	287	

workforce generally possesses a moderate to high level of formal education that can support the acquisition and application of trauma management competencies.

A highly educated and vocationally trained responder workforce signifies the professionalization of local disaster management. Beyond physical agility, modern emergency response demands critical thinking, complex problem-solving, and precise communication. This educational foundation ensures responders can master advanced trauma care and adapt to evidence-based practices during high-pressure crises.

In their 2024 analysis of emerging competencies for emergency management professionals, Richardson et al. emphasized that post-secondary education equips responders with the advanced critical thinking, leadership, and decision-making strategies necessary to navigate increasingly complex hazard environments. They noted that formal higher education closes the performance gap by shifting responders from merely reacting to emergencies to applying strategic, evidence-based interventions. Similarly, a 2024 comprehensive framework on disaster risk education underscored that structured academic and vocational backgrounds significantly enhance a responder's cognitive capacity for comprehensive risk assessment, inter-agency collaboration, and the effective execution of emergency protocols, proving essential for establishing proactive and sustainable community resilience (Shaw, 2024).

Years of experience in emergency response. Table 1 presents the profile of the MDRRMER in the 5th District of Camarines Sur based on their years of experience in emergency response. Out of 110 respondents, the largest group had 1–3 years of experience with 43 or 39.09%, followed by those with 4–6 years of experience with 26

or 23.64%. Smaller proportions were observed among those with less than 1 year of experience with 25 or 22.73%, and those with more than 6 years of experience with only 16 or 14.55%. This profile indicates that MDRRMER in the district are predominantly in the early to mid-phase of their emergency response careers, with a relatively small proportion of highly experienced responders, suggesting a workforce that is still in the process of consolidating practical expertise in trauma management and disaster operations.

While these newer responders likely possess fresh, updated theoretical knowledge from recent training, their limited long-term field exposure suggests a potential vulnerability in complex, high-stress disaster scenarios. Effective trauma management often relies heavily on intuitive, rapid clinical judgment and "muscle memory" that are exclusively forged through years of diverse, on-the-ground experience with unpredictable emergencies. Therefore, this demographic reality highlights a critical need for municipal management to prioritize intensive, high-fidelity simulation drills, consistent skill-refresher courses, and active senior-to-junior mentorship programs to bridge this experiential gap and ensure the rapid, reliable execution of life-saving protocols.

A study investigating the maintenance of clinical skills among emergency life support providers found that a responder's competence and confidence in performing complex trauma interventions are inextricably linked to their frequency of field application, warning that personnel with fewer years of experience are particularly vulnerable to critical "skill decay" if not continuously exposed to practical scenarios (Surtees & Lambert, 2026). Similarly, an evaluation of emergency health services and paramedic education noted that when a workforce is dominated by individuals with only one to five years of professional experience, it becomes absolutely vital to implement structured, advanced simulation-based education to compensate for their lack of historical field exposure, thereby ensuring high-quality, continuous patient care and accurate clinical decision-making during mass-casualty events (Polat, M., & Köse, 2025).

Training received related to trauma management. Table 1 presents the profile of the MDRRMER based on the training they have received related to trauma management. Out of 110 respondents, all of them or 100.00% had completed Basic Life Support (BLS), making it the universally prevalent training, followed by First Aid and Trauma Care with 77 or 70.00%. Smaller proportions of the responders underwent advanced and specialized training, including Advanced Cardiac Life Support (ACLS) with 37 or 33.64%, Mass Casualty Management (MCM) with 36 or 32.73%, Crisis Intervention Training with 17 or 15.45%, and Water Search and Rescue (WASAR) with only 10 or 9.09%. This training profile suggests that while the disaster risk reduction management emergency responders in this district possess a solid universal foundation in fundamental life-saving techniques, there is a significant drop-off in the acquisition of specialized and advanced trauma management skills.

The universal completion of BLS indicates strong compliance with foundational emergency response standards, ensuring that every responder can perform immediate, life-sustaining interventions upon arriving at a scene. However, the relatively low participation rates in specialized courses like ACLS, MCM, and Crisis Intervention Training reveal a critical gap in local capacity building. Emergency response, particularly in disaster-prone municipalities, frequently demand advanced medical interventions, coordinated triage during large-scale catastrophes, and psychological first aid. The current training distribution implies that the municipal units may be over-reliant on fundamental baseline skills, which could limit their operational independence and efficacy when confronted with complex trauma scenarios, mass casualty incidents, or severe flooding events that require highly specialized, multi-disciplinary rescue expertise.

The National Disaster Risk Reduction and Management Plan (NDRRMP) 2020–2030 underscores capacity building for DRRM workers, particularly in risk knowledge, early warning, and response capability as a critical component of effective disaster preparedness and response at all levels of government. Similarly, a assessment of disaster mitigation response reported that local government units were generally rated highly prepared in terms of planning and training but still faced gaps in resource allocation and specialized capability, underscoring the importance of sustained, programmatic training to deepen competencies beyond the basic level. Complementing this, recent discussions on community first responders stress that structured training in BLS,

first aid, mass-casualty incident management, and psychosocial support significantly enhance responders' effectiveness and confidence during emergencies (Sagun, 2025).

Level of Trauma Management Competency.

Risk Assessment and Planning. Table 1 presents the competency level of MDRRMER in the 5th District of Camarines Sur along risk assessment and planning. Based on the data, the respondents are highly competent in terms of the ability to assess trauma risks in disaster-prone areas (3.41), capability to identify needed resources for trauma management (3.40), capability to recommend preventive actions to reduce trauma risks (3.39), and competence in using data to estimate potential trauma cases during disasters (3.25). However, they are moderately competent on the skill in analyzing community vulnerability to trauma-related incidents (3.24) and skill in integrating trauma management into local disaster plans (3.21). Overall, the respondents are highly competent on risk assessment and planning with an Average Weighted Mean (AWM) of 3.32. The data reveals that while responders demonstrate high proficiency in "front-end" operational tasks, such as identifying immediate risks and resources, there is a noticeable decrease in proficiency when moving toward "back-end" technical and administrative tasks.

This pattern suggests that the MDRRMERs in the 5th District possess strong situational awareness and practical readiness, likely sharpened by the frequent environmental hazards inherent to the Bicol Region. However, their lower scores in data-driven estimation and planning integration imply that while they know what to do when a trauma event occurs, they are less confident in the abstract and systematic aspects of disaster governance.

According to the Tegelan (2026), the primary challenge for local responders is shifting from technical assessment to "meaningful action" and policy intervention, as risk assessments are only effective if they are successfully embedded into everyday governance and formal local plans. Furthermore, Ferrer (2026) notes that institutional readiness in Philippine LGUs is often hindered by a gap in "technological and risk assessment tools," where responders struggle with data capture and standardized monitoring systems despite having high general disaster literacy.

Indicators	Weighted Mean	Verbal Interpretation
1. Ability to assess trauma risks in disaster-prone areas.	3.41	Highly Competent
2. Capability to identify needed resources for trauma management.	3.40	Highly Competent
3. Capability to recommend preventive actions to reduce trauma risks.	3.39	Highly Competent
4. Efficiency in coordinating trauma risk assessments with health units.	3.35	Highly Competent
5. Competence in mapping high-risk locations for injury and trauma.	3.34	Highly Competent
6. Competence in developing response plans specific to trauma cases.	3.33	Highly Competent
7. Proficiency in evaluating existing trauma-related risk reduction measures.	3.30	Highly Competent
8. Competence in using data to estimate potential trauma cases during disasters.	3.25	Highly Competent
9. Skill in analyzing community vulnerability to trauma-related incidents.	3.24	Moderately Competent
10. Skill in integrating trauma management into local disaster plans.	3.21	Moderately Competent
Average Weighted Mean	3.32	Highly Competent

Capacity Building and Training. Table 3 presents the level of trauma management competency of MDRRMER in the 5th District of Camarines Sur along capacity building and training. Based on the data, the respondents are highly competent in terms of the ability to apply learned trauma-care techniques during drills (3.50), competence in conducting trauma first-aid training for responders (3.45), competence in demonstrating proper handling of trauma victims (3.43), and capability to evaluate training outcomes related to trauma care (3.32). However, they are moderately competent on the competence in coordinating trauma-related training with other agencies (3.22) and skill in conducting refresher training on advanced trauma life support (3.19). Overall, the respondents are highly competent on capacity building and training with an AWM of 3.35. This pattern suggests that MDRRMER are strongest in directly applying, demonstrating, and cascading trauma-care skills in practical settings, while relatively less proficient in higher-order functions such as evaluation, inter-agency coordination, and advanced refresher training.

Capacity building among MDRRMER appears focused on hands-on skills and internal team training, with strong competence in applying techniques during drills and handling trauma victims, but relatively weaker abilities in evaluating trainings, coordinating with other agencies, and sustaining advanced trauma life support through regular refresher courses.

According to the American College of Surgeons (2026), the updated Advanced Trauma Life Support (ATLS) guidelines stress that frequent refresher courses in specialized clinical care are vital for reducing preventable deaths, yet maintaining these high-tier skills remains a challenge in local government units due to limited access to advanced medical simulation. Furthermore, CARE Philippines (2026) notes that a significant gap in the current humanitarian landscape is "coordination across actors," where local responders often struggle to synchronize their operational protocols with external health agencies and NGOs during large-scale incidents.

Table 3 Level of Trauma Management Competency along Capacity Building and Training		
Indicators	Weighted Mean	Verbal Interpretation
1. Ability to apply learned trauma-care techniques during drills.	3.50	Highly Competent
2. Competence in conducting trauma first-aid training for responders.	3.45	Highly Competent
3. Competence in demonstrating proper handling of trauma victims.	3.43	Highly Competent
4. Skill in mentoring team members on trauma response.	3.38	Highly Competent
5. Proficiency in using trauma management tools and kits.	3.38	Highly Competent
6. Ability to promote continuous trauma-care learning among responders.	3.34	Highly Competent
7. Skill in adapting trauma protocols in various emergency settings.	3.33	Highly Competent
8. Capability to evaluate training outcomes related to trauma care.	3.32	Highly Competent
9. Competence in coordinating trauma-related training with other agencies.	3.22	Moderately Competent
10. Skill in conducting refresher training on advanced trauma life support.	3.19	Moderately Competent
Average Weighted Mean	3.35	Highly Competent

Operations and Response Coordination. Table 4 presents the level of trauma management competency of MDRRMER in the 5th District of Camarines Sur along operations and response coordination. Based on the data, the respondents are highly competent in terms of skill in prioritizing trauma patients using triage methods (3.46), competence in performing rapid trauma assessment at the scene (3.45), and ability to document trauma incidents and treatments accurately (3.40). However, they received the lowest ratings, though still highly competent, on competence in maintaining communication during trauma response operations (3.30), efficiency in coordinating medical evacuation for trauma cases (3.29), and skill in controlling bleeding and immobilizing fractures (3.26). Overall, the respondents are highly competent on operations and response coordination with an AWM of 3.36.

This distribution suggests that MDRRMER are strongest in initial triage, rapid assessment, and documentation, while relatively less proficient in continuous communication, evacuation coordination, and some hands-on trauma stabilization procedures.

Operations and response coordination among MDRRMER appear strongest in initial triage, rapid assessment, and documentation, which are vital for organizing trauma care. However, slightly lower ratings in communication, evacuation coordination, and specific trauma procedures indicate a need for more drills, clearer referral pathways, and simulation-based training to achieve fully coordinated, end-to-end trauma management.

According to Usoro et al. (2023), disaster response preparedness such as patient assessment and mass casualty triage is a foundational skill that frontline personnel frequently execute well; however, they face significantly more operational friction when navigating the logistical burdens of resource allocation, inter-agency communication, and medical evacuation. Similarly, Bixio et al. (2024) affirmed that managing trauma in austere, resource-limited settings necessitates a highly flexible application of clinical skills. Their guidelines underscore that while responders possess strong theoretical frameworks for basic care, hands-on interventions like advanced hemorrhage control and sustained tactical communication are consistently more challenging under pressure and require targeted, simulation-based preparation to optimize real-world performance.

Table 4		
Level of Trauma Management Competency along Operations and Response Coordination		
Indicators	Weighted Mean	Verbal Interpretation
1. Skill in prioritizing trauma patients using triage methods.	01	Highly Competent
2. Competence in performing rapid trauma assessment at the scene.	3.45	Highly Competent
3. Ability to document trauma incidents and treatments accurately.	3.40	Highly Competent
4. Competence in working calmly under pressure during trauma emergencies.	3.37	Highly Competent
5. Efficiency in using available resources for trauma response operations.	3.36	Highly Competent
6. Capability to coordinate with hospitals for advanced trauma care.	3.35	Highly Competent
7. Proficiency in stabilizing trauma victims before transfer.	3.35	Highly Competent
8. Competence in maintaining communication during trauma response operations.	3.30	Highly Competent
9. Efficiency in coordinating medical evacuation for trauma cases.	3.29	Highly Competent
10. Skill in controlling bleeding and immobilizing fractures.	3.26	Highly Competent
Average Weighted Mean	3.36	Highly Competent

Public Awareness and Communication. Table 5 presents the level of trauma management competency of MDRRMER in the 5th District of Camarines Sur along public awareness and communication. Based on the data, the respondents are highly competent in terms of the capability to deliver clear instructions during trauma emergencies (3.36), efficiency in communicating public alerts for trauma situations (3.31), competence in explaining basic trauma-care procedures to the public (3.30), skill in promoting community awareness on trauma prevention (3.30), proficiency in coordinating information campaigns on trauma response (3.25), and ability to work with schools or groups to promote trauma preparedness (3.25). However, they are moderately competent on the skill in using media and social platforms to share trauma-related guidance (3.22) and capability to clarify misinformation about trauma first aid (3.06). Overall, the respondents are highly competent on public awareness and communication with an AWM of 3.26. The data reveals strong foundational skills in direct, immediate communication during crises but relative weaknesses in leveraging digital tools, partnerships, and countering

false information, suggesting that MDRRMER excel in urgent, face-to-face interactions yet face challenges in broader, proactive outreach and digital literacy.

This pattern indicates that MDRRMER in the 5th District of Camarines Sur possesses robust core competencies for public awareness and communication in trauma management, particularly in crisis delivery, but require targeted enhancements in media utilization and misinformation management to achieve comprehensive effectiveness.

This pattern indicates that MDRRMER in the 5th District of Camarines Sur possesses robust core competencies for public awareness and communication in trauma management, particularly in crisis delivery, but require targeted enhancements in media utilization and misinformation management to achieve comprehensive effectiveness. Mohsenzadeh et al. (2025) emphasized that effective disaster risk communication depends on trust-building and transparent messaging but is hindered by socio-economic and technological factors, such as limited digital proficiency among responders, mirroring the lower rankings in media use and misinformation clarification. Similarly, Burke et al. (2026) stressed proficiency in situational awareness and public health communication yet noted persistent deficiencies in countering infodemics and community partnerships, consistent with the study's lower indicators.

Table 5		
Level of Trauma Management Competency along Public Awareness and Communication		
Indicators	Weighted Mean	Verbal Interpretation
1. Capability to deliver clear instructions during trauma emergencies.	3.36	Highly Competent
2. Efficiency in communicating public alerts for trauma situations.	3.31	Highly Competent
3. Competence in explaining basic trauma-care procedures to the public.	3.30	Highly Competent
4. Skill in promoting community awareness on trauma prevention.	3.30	Highly Competent
5. Competence in leading community orientations on emergency trauma handling.	3.29	Highly Competent
6. Ability to use simple language when educating the public about trauma care.	3.28	Highly Competent
7. Proficiency in coordinating information campaigns on trauma response.	3.25	Highly Competent
8. Ability to work with schools or groups to promote trauma preparedness.	3.25	Highly Competent
9. Skill in using media and social platforms to share trauma-related guidance.	3.22	Moderately Competent
10. Capability to clarify misinformation about trauma first aid.	3.06	Moderately Competent
Average Weighted Mean	3.26	Highly Competent

Logistics and Financial Management. Table 6 presents the level of trauma management competency of MDRRMER in the 5th District of Camarines Sur in terms of logistics and financial management. Based on the data, the respondents are highly competent in terms of efficiency in managing transport logistics for trauma patients (3.45), competence in securing trauma kits and medical supplies (3.43), and capability to coordinate supply delivery during trauma emergencies (3.36). However, they are moderately competent on proficiency in preparing logistics plans for trauma operations (3.16), efficiency in utilizing funds for trauma-care activities (3.15), and capability to plan budget requirements for trauma preparedness (3.14). Overall, the respondents are highly competent on logistics and financial management with an AWM of 3.29.

Table 6		
Level of Trauma Management Competency along Logistics and Financial Management		
Indicators	Weighted Mean	Verbal Interpretation
1. Efficiency in managing transport logistics for trauma patients.	3.45	Highly Competent
2. Competence in securing trauma kits and medical supplies.	3.43	Highly Competent
3. Capability to coordinate supply delivery during trauma emergencies.	3.36	Highly Competent
4. Ability to maintain updated inventory of trauma-care equipment.	3.34	Highly Competent
5. Skill in recording and reporting trauma resource consumption.	3.32	Highly Competent
6. Skill in allocating resources based on trauma response priorities.	3.31	Highly Competent
7. Competence in maintaining storage areas for trauma supplies.	3.23	Moderately Competent
8. Proficiency in preparing logistics plans for trauma operations.	3.16	Moderately Competent
9. Efficiency in utilizing funds for trauma-care activities.	3.15	Moderately Competent
10. Capability to plan budget requirements for trauma preparedness.	3.14	Moderately Competent
Average Weighted Mean	3.29	Highly Competent

The data reveals that while responders are highly adept at executing immediate, tangible logistical tasks during active emergencies such as moving patients and securing on-hand supplies, there remains a slight disconnect in their comprehensive understanding and execution of long-term, abstract administrative duties like strategic financial planning and proactive budget forecasting. Specifically, responders may not fully internalize the critical necessity of pre-disaster financial preparation and resource planning, leading to a diminished sense of efficacy when tasked with allocating funds or drafting long-term logistical blueprints compared to their high confidence in Immediate, on-the-ground resource deployment.

According to Boyer (2025), an emergency unit's operational success is heavily influenced by its baseline financial preparedness; systems that focus primarily on real-time surge capacity and short-term logistics often exhibit vulnerabilities in sustaining prolonged operations, which explains the ongoing challenge responders face when planning long-term budgetary requirements. Similarly, the Asian Development Bank (2024) affirmed that holistic disaster risk management necessitates robust institutional frameworks that prioritize upstream financial planning just as heavily as downstream logistical response.

Relationship between demographic profile and the level of core competency among MDRRMER in the 5th District of Camarines Sur.

Table 7 presents the relationship between the demographic profile of the MDRRMER and their level of core competency along risk assessment and planning, capacity building and training, operations and response coordination, public awareness and communication, and logistics and financial management. Age (computed χ^2 ranging from 27.569 to 36.24, $p < 0.05$), years of experience ($\chi^2 = 17.203 - 23.378$, $p < 0.05$), and training received ($\chi^2 = 36.616 - 50.481$, $p < 0.00$) consistently showed significant relationships (null hypothesis rejected), while sex was significant only in public awareness and communication ($\chi^2 = 10.095$, $p = 0.017$, rejected) and not significant elsewhere ($p > 0.05$, accepted), and educational attainment was non-significant across all ($\chi^2 = 9.380 - 18.874$, $p > 0.40$, accepted). These results reveal that experiential and training-related demographics

robustly predict competency, with age and experience reflecting accumulated practical expertise, whereas sex and education exert limited influence except in communication tasks.

This pattern underscores that MDRRMER competencies were predominantly driven by dynamic factors like training exposure and service duration rather than inherent traits such as sex or formal schooling, emphasizing the role of targeted professional development in enhancing trauma management capabilities.

Table 7
Relationship between demographic profile and the level of core competency among MDRRMER in the 5th District of Camarines Sur

Profile	RISK ASSESSMENT AND PLANNING					
	df	Computed χ^2	Critical χ^2 Value	p-value (0. 05)	Decision	Interpretation
1. Age	15	27.569	24.996	0.02	Rejected	Significant
2. Sex	3	7.787	7.815	0.05	Accepted	Not Significant
3. Educational Attainment	18	9.380	28.869	i	Accepted	Not Significant
4. Years of experience in emergency response	9	17.203	16.919	0.04	Rejected	Significant
5. Training received related to trauma management	15	39.901	24.996	0.00	Rejected	Significant
Profile	CAPACITY BUILDING AND TRAINING					
	df	Computed χ^2	Critical χ^2 Value	p-value (0. 05)	Decision	Interpretation
1. Age	15	27.772	24.996	0.02	Rejected	Significant
2. Sex	3	0.524	7.815	0.91	Accepted	Not Significant
3. Educational Attainment	18	15.00	28.869	0.66	Accepted	Not Significant
4. Years of experience in emergency response	9	23.378	16.919	0.01	Rejected	Significant
5. Training received related to trauma management	15	36.6164	24.996	0.00	Rejected	Significant
Profile	OPERATIONS AND RESPONSE COORDINATION					
	df	Computed χ^2	Critical χ^2 Value	p-value (0. 05)	Decision	Interpretation
1. Age		36.24	24.996	0.02	Rejected	Significant
2. Sex		2.255	7.815	0.52	Accepted	Not Significant
3. Educational Attainment		13.548	28.869	0.76	Accepted	Not Significant
4. Years of experience in emergency response		21.306	16.919	0.01	Rejected	Significant
5. Training received related to trauma management		41.774	24.996	0.00	Rejected	Significant
Profile	PUBLIC AWARENESS AND COMMUNICATION					
	df	Computed χ^2	Critical χ^2 Value	p-value (0. 05)	Decision	Interpretation
1. Age		35.325	24.996	0.002	Rejected	Significant
2. Sex		10.095	7.815	0.017	Rejected	Significant
3. Educational Attainment		18.765	28.869	0.41	Accepted	Not Significant
4. Years of experience in emergency response		19.225	16.919	0.02	Rejected	Significant
5. Training received related to trauma management		48.444	24.996	0.00	Rejected	Significant

Profile	LOGISTICS AND FINANCIAL MANAGEMENT					
	df	Computed χ^2	Critical χ^2 Value	p-value (0. 05)	Decision	Interpretation
1. Age		35.168	24.996	0.00	Rejected	Significant
2. Sex		6.878	7.815	0.08	Accepted	Not Significant
3. Educational Attainment		18.874	28.869	0.40	Accepted	Not Significant
4. Years of experience in emergency response		20.277	16.919	0.02	Rejected	Significant
5. Training received related to trauma management		50.481	24.996	0.00	Rejected	Significant

Pojas (2024) noted that DRRM programs in Angono, Rizal showed strong implementation in response and preparedness activities but identified limitations in resources and communication systems that constrained comprehensive disaster risk management. Similarly, a 2024 study on disaster management programs among Metro Naga localities reported that operational readiness and training were generally satisfactory, yet highlighted persistent challenges in logistics support, financial sustainability, and public information campaigns, recommending continuous improvement in these supporting functions to enhance overall resilience (del Rosario, 2023).

Challenges encountered by the MDRRMER in delivering trauma management care

Table 10 presents the level of trauma management competency regarding the logistics and financial management indicators. The AWM is 3.33, verbally interpreted as highly affect. Shortage of trauma supplies and medical equipment during emergencies ranked highest with a WM of 3.42, highly affect. This was followed closely by difficult terrain and weather conditions affecting response time (WM= 3.41, highly affect) and the public's limited knowledge on basic trauma first aid (WM= 3.41, highly affect). Conversely, the lowest-ranked indicators, although still relatively high, included insufficient post-incident evaluation and feedback mechanisms (WM= 3.28, highly affect), psychological stress and burnout among responders (WM= 3.22, affect), and delays in patient geographic barriers dominate operational difficulties, whereas psychological and systemic evaluation concerns, though acknowledged, lower in perceived impact. This suggests that while material scarcities are immediate and visible impediments to trauma response, responder well-being and post-incident learning mechanisms remain underemphasized in the operational consciousness of MDRRMER. The data reveals that while MDRRMER are heavily constrained by immediate, tangible barriers such as the lack of acute field resources, severe environmental impediments, and the absence of basic community assistance, there remains a slightly lower emphasis on systemic operational phases and internal well-being.

This pattern indicates that MDRRMER in the 5th District of Camarines Sur confronted tangible, material obstacles to trauma management particularly supply shortages and environmental constraints more acutely than systemic and human factors, highlighting a need for integrated capacity-building that addresses both logistics resilience and responder welfare to sustain long-term trauma response effectiveness.

According to Almarwan et al. (2024), geographical isolation, difficult terrain, and infrastructural deficits substantially prolonged ambulance and responder arrival times, exacerbating the severity of trauma cases where immediate intervention was critical. This spatial delay magnified the consequences of equipment shortages and resource limitations, which they identified as primary operational barriers for emergency responders in isolated settings. To mitigate these prolonged response times, the initial intervention by bystanders became crucial; however, a recent Philippine study by Mañalac et al. (2026) revealed a significant deficiency in public knowledge and the availability of basic first-aid supplies within local communities.

Table 10

Challenges encountered by the MDRRMER in delivering trauma management care

Indicators	Weighted Mean	Verbal Interpretation
1. Shortage of trauma supplies and medical equipment during emergencies.	3.42	Highly affect
2. Difficult terrain and weather conditions affecting response time.	3.41	Highly affect
3. Public's limited knowledge on basic trauma first aid.	3.41	Highly affect
4. Limited number of trained personnel for trauma response.	3.39	Highly affect
5. Breakdown of communication systems during large-scale incidents.	3.37	Highly affect
6. Insufficient funding for responder training and equipment.	3.35	Highly affect
7. Inadequate coordination with hospitals for trauma referrals.	3.28	Highly affect
8. Insufficient post-incident evaluation and feedback mechanisms.	3.28	Highly affect
9. Psychological stress and burnout among responders.	3.22	Affect
10. Delays in patient evacuation and inter-facility transfer.	3.20	Affect
Average Weighted Mean	3.33	Highly affect

CONCLUSION

The Municipal Disaster Risk Reduction and Management Emergency Responders (MDRRMER) in the 5th District of Camarines Sur exhibit a solid foundational capacity for emergency trauma response. The workforce is predominantly young, male, and college-educated, possessing strong basic trauma training despite having limited years of on-the-ground experience. This foundational strength translates into highly competent frontline operations, particularly in risk assessment, capacity building, operational coordination, and public awareness. However, there is a distinct need for professional maturation and specialization, particularly in critical system-support functions such as logistics and financial management, where responders currently demonstrate lower, albeit adequate, competency levels.

Furthermore, responder proficiency is heavily reliant on practical experience and targeted continuous education rather than baseline educational attainment alone. While age, experience, and trauma-specific training significantly drive core competency, these skilled responders are ultimately constrained by severe systemic and operational challenges. Critical hurdles such as shortages in essential supplies and equipment, formidable environmental and geographic barriers, inter-agency communication gaps, and a lack of community first-aid knowledge, highly impact the delivery of care. This demonstrates that individual skill development must be matched with systemic, resource-based interventions for emergency response to be truly effective.

Ultimately, to address these interconnected challenges and elevate the overall quality of emergency care, targeted capacity-building is essential. The proposed Enhanced Trauma Management and Disaster Operations Training Program serves as a necessary and appropriate intervention to bridge the identified operational and competency gaps. By focusing on advanced clinical skills, seamless inter-agency coordination, robust public risk communication, and crucial logistics and financial management, this program is poised to transition the MDRRMER from basic proficiency to an advanced, integrated, and highly resilient system of trauma management.

RECOMMENDATIONS

1. In view of the predominantly young, male, and college-educated MDRRMER workforce with limited years of experience, municipal and provincial authorities may establish structured mentorship programs and career development schemes so that younger responders may be progressively exposed to more complex trauma management roles and leadership responsibilities.
2. MDRRM offices may prioritize focused trainings on logistics planning, inventory control, budgeting, and resource mobilization, alongside sessions on data use for estimating trauma cases, community vulnerability analysis, plan integration, communication and evacuation coordination, advanced trauma refresher courses, and media-based risk communication so weaker system-support and technical functions may be strengthened.
3. Given that age, years of emergency response experience, and the amount and type of trauma related training were significantly related to core competency, DRRM managers may adopt a tiered, continuous training program (e.g., from BLS to ACLS, MCM, and advanced trauma simulations) and may use training and experience records as one basis for task assignment during operations so that competency may be maximized regardless of sex or educational level.
4. The challenges in trauma management care were found to be highly affecting, local government units and partner agencies may allocate additional funds for trauma-specific equipment and communication systems, may strengthen inter-agency coordination mechanisms, and may implement sustained community education campaigns on basic trauma first aid so that operational constraints may be reduced at both system and community levels.
5. To ensure that the proposed Enhanced Trauma Management and Disaster Operations Training Program is fully utilized, MDRRM offices may formally adopt the program through local policies, may integrate it into their annual DRRM plans and budgets, and may conduct regular evaluations and revisions based on drills, simulations, and actual incident feedback so that its relevance and effectiveness may be continuously improved.

REFERENCES

1. Abdulaziz Ibrahim ALmarwan, Hamoud Saad S Almatrafi, Abdullah Saud O Alharbi, Faris Abdullah M Alotaibi, Mohammed Abdulmohsen Al-Sulmi, Abdulaziz Abdullah Albalawi, Amir Ali Alanzi, Ali Salamah Alanazi. (2025). Barriers To Accessing Emergency Medical Services In Remote Regions: A Red Crescent Case Study. *Journal of International Crisis and Risk Communication Research* , 39–52. <https://doi.org/10.63278/jicrcr.vi.3410>
2. American College of Surgeons. (2026). Advanced Trauma Life Support. <https://www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/>
3. Asian Development Bank. (2024). Disaster risk management action plan, 2024–2030: Redoubling action toward disaster resilience. <https://reliefweb.int/report/world/disaster-risk-management-action-plan-2024-2030-redoubling-action-toward-disaster-resilience>
4. Baik, D., Yi, N., Han, O., & Kim, Y. (2024). Trauma nursing competency in the emergency department: a concept analysis. *BMJ open*, 14(6), e079259. <https://doi.org/10.1136/bmjopen-2023-079259>
5. Bixio, M., Carenzo, L., Accurso, G., Balagna, R., Bazurro, S., Chiarini, G., Cortegiani, A., Faraldi, L., Fontana, C., Giannarzia, E., Giarratano, A., Molineris, E., Raineri, S. M., & Marin, P. (2024). Management of critically ill patients in austere environments: good clinical practice by the Italian Society of Anesthesia, Analgesia, Resuscitation and Intensive Care (SIAARTI). *Journal of anesthesia, analgesia and critical care*, 4(1), 74. <https://doi.org/10.1186/s44158-024-00209-8>
6. Boyer, M. (2025, October 2-3). Improving emergency preparedness – Tools and examples [Workshop presentation]. TAFF Workshop, Brussels, Belgium. Global Facility for Disaster Reduction and Recovery. <https://www.gfdrr.org/sites/default/files/2025->

- 10/TAFF%20October%20Workshop_%20Improving%20Emergency%20Preparedness%20%E2%80%93%20Tools%20and%20Examples.pdf
7. Brodin, W., Jonson, C. O., Johansson, M., & Prytz, E. (2026). Exploring teamwork, trust, and emergency response competence in emergent ad-hoc immediate responder groups: an experimental simulation study. *Ergonomics*, 69(4), 682–692. <https://doi.org/10.1080/00140139.2025.2478256>
8. Burke, R. V., Cadet, J., Quintanilla, N. A., Knieser, L., Kirsch, T. D., Wada, N. I., Unruh, L., Rainwater-Lovett, K., & Freeman, J. D. (2026). Updated Core Competencies for Disaster Medicine and Public Health. *JAMA network open*, 9(2), e2560176. <https://doi.org/10.1001/jamanetworkopen.2025.60176>
9. Caponnetto, P., Senia, P., Prezzavento, G. C., Uccelli, E., Vitale, N. M., Rapisarda, V., Fusco, F. A., Sferrazzo, G., Vella, F., & Vitale, E. (2026). Driving in emergency medical service settings: a cross-sectional study of clinical psychological factors and perceived stress in a sample of ambulance drivers. *Frontiers in public health*, 14, 1773290. <https://doi.org/10.3389/fpubh.2026.1773290>
10. CARE Philippines. (2026). Disaster response. CARE Philippines. <https://care-philippines.org/category/reports-publications/topic/disaster-response/>
11. del Rosario, J. S. A. (2023). Disaster management programs of select members of the Metro Naga Development Council in the province of Camarines Sur [Paper presentation]. International Research Conference on Multidisciplinary Innovation and Best Practices in Education (IRCMIBPE), Manila, Philippines.
12. Delaney, P. G., Eisner, Z. J., Pine, H., Klapow, M., Thullah, A. H., Bamuleke, R., Nuur, I. M., & Raghavendran, K. (2024). Leveraging transportation providers to deploy lay first responder (LFR) programs in three sub-Saharan African countries without formal emergency medical services: Evaluating longitudinal impact and cost-effectiveness. *Injury*, 55(5), 111505. <https://doi.org/10.1016/j.injury.2024.111505>
13. Ferrer, J. (2026). Disaster Risk Reduction, Preparedness, and Resilience in the Philippines: A Systematic Narrative Literature Review. *Journal of Interdisciplinary Perspectives*, 4(5), 16–26. <https://doi.org/10.69569/jip.2026.092>
14. GMA Regional TV News. (2024). 1,921 road mishaps in Camarines Sur from January to May 2024. GMA Network. <https://www.gmanetwork.com/regionaltv/news/102203/1921-road-mishaps-in-camarines-sur-from-january-to-may-2024/story/>
15. Makkink, A. W., & Nkhoma, B. E. (2025). Gender discrimination in the emergency services: Female paramedic experiences in South Africa. *African journal of primary health care & family medicine*, 17(1), e1–e11. <https://doi.org/10.4102/phcfm.v17i1.4945>
16. Mañalac, G. A. A., Constantino, A. J. E., Baylocon, A. J. B., Calagday, H. A., De la Cruz III, R. J., Natalio, A. L., Alolor, N. D. D., & Dacumos, S. M. C. (2026). Preparedness level of flood-prone residents in a selected local community. *Ignatian International Journal for Multidisciplinary Research*, 4(3), 1500–1513. <https://doi.org/10.5281/zenodo.19317890>
17. Mohsenzadeh, Y., Farrokhi, M., Saatchi, M., Pisheh, E. G., & Khankeh, H. (2025). A scoping review of factors affecting disaster risk communication, 2000-2023. *Journal of education and health promotion*, 14, 519. https://doi.org/10.4103/jehp.jehp_1099_24
18. National Disaster Risk Reduction and Management Council. (2020). National Disaster Risk Reduction and Management Plan (NDRRMP) 2020–2030: Results-based monitoring and evaluation plan.
19. Olea, J., Luzon, W. M., Martinez, B. F., Florece, J. T., Ramos, A. C., & Yu, M. D. (2025). Triage management of trauma patients among the hospitals in the 5th District of Camarines Sur: Intervention for rapid assessment and care. *Research and Analysis Journal*, 8(12), 1–16. <https://doi.org/10.18535/raj.v8i12.576>
20. Philippine News Agency. (2026). DOH-Bicol records 61 fireworks-related injuries. <https://www.pna.gov.ph/articles/1241124>
21. Pojas, L. (2024). Impact of Disaster Risk Reduction and Management Program on Public Schools in Angono Rizal: Inputs to Develop an Enhanced Contingency Plan. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4966595>
22. Polat, M., & Köse, G. (2025). Evaluation of paramedics education in emergency health services. *BMC medical education*, 25(1), 1649. <https://doi.org/10.1186/s12909-025-08268-3>

23. Richardson, K. J., McDuffie, J. D., & Cooper, T. D. (2024). The capable emergency management professional: Emerging competencies for a changing world. In L. M. Phipps & D. A. McEntire (Eds.), *Current and emerging trends in the management of international disasters* (Chapter 17). University of Texas at Arlington Libraries. https://uta.pressbooks.pub/trendsininternationaldisastermanagement/chapter/the_capable_emergency_management_professional/
24. Sagun, M. G. C. (2025). Disaster mitigation response of selected municipalities and city in the 5th District of the Province of Pangasinan. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 11(11), 1–?. <https://doi.org/10.36713/epra24852>
25. Şahin, N. E., & Karaca, T. (2025). Disaster response self-efficacy and disaster preparedness levels of Turkish nurses: A cross-sectional study. *BMC emergency medicine*, 25(1), 158. <https://doi.org/10.1186/s12873-025-01299-5>
26. Surtees, J. E., & Lambert, C. V. (2026). Maintenance of competence in rarely performed clinical skills by advanced life support providers in Gauteng, South Africa: A mixed-methods study. *African journal of emergency medicine : Revue africaine de la medecine d'urgence*, 16(1), 100932. <https://doi.org/10.1016/j.afjem.2025.100932>
27. Tang, J., Chang, H., & Feng, J. (2024). Development of a disaster preparedness training program for community leaders: Evidence from Taiwan. *International Journal of Disaster Risk Reduction*, 108, 104517. <https://doi.org/10.1016/j.ijdr.2024.104517>
28. Tegelan, A. D. F. (2026). From risk to action: Identifying risk-sensitive policy interventions and entry points for mainstreaming climate and disaster risk assessment into local plans. UP Resilience Institute. <https://resilience.up.edu.ph/from-risk-to-action-identifying-risk-sensitive-policy-interventions-and-entry-points-for-mainstreaming-climate-and-disaster-risk-assessment-into-local-plans/>
29. Usoro, A., Mehmood, A., Rapaport, S., Ezeigwe, A. K., Adeyeye, A., Akinlade, O., Dias, J., Barnett, D. J., Hsu, E. B., Tower, C., & Razzak, J. (2023). A Scoping Review of the Essential Components of Emergency Medical Response Systems for Mass Casualty Incidents. *Disaster medicine and public health preparedness*, 17, e274. <https://doi.org/10.1017/dmp.2022.235>
30. World Health Organization (WHO). (2024). Three Philippine Emergency Medical Assistance Teams — ready for international deployment based on WHO standards. <https://www.who.int/philippines/news/detail/19-09-2024-three-philippine-emergency-medical-assistance-teams---ready-for-international-deployment-based-on-who-standards>
31. Yildiz, A., & Shaw, R. (Eds.). (2024). *Disaster and climate risk education: Insights from knowledge to action*. Springer Nature Singapore. <https://doi.org/10.1007/978-981-97-5987-3>