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Research Article

Disaster Preparedness in The Department of Health Accredited Level I Hospitals of Camarines Norte: Basis for Enhancement of The Training Program

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Abstract:

Disaster education and training programs are essential components of hospital preparedness, equipping healthcare personnel with the necessary knowledge, skills, and confidence to effectively manage emergencies. This quantitative study on disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte utilized the descriptive correlational design using a questionnaire distributed to 101 hospital personnel and administrators. Data were analyzed using weighted mean, Kruskal Wallis H Test, and t-test. Results revealed that the Department of Health-accredited Level I hospitals in Camarines Norte demonstrate disaster preparedness, as perceived by administrators and personnel, across three key aspects. In terms of human resources, these hospitals have dedicated disaster management teams, and regular disaster drills are conducted to ensure staff readiness. For facilities and equipment, emergency exits and evacuation routes are clearly marked and easily accessible. Regarding policies and programs, the hospitals actively participate in local government disaster preparedness initiatives and maintain protocols for rapid coordination with other healthcare facilities during emergencies. Despite these strengths, disaster preparedness in these hospitals is influenced by several factors, including healthcare workers' concerns about personal safety, insufficient maintenance of disaster-related equipment, and limited funding allocation for disaster management programs. A policy recommendation is proposed to enhance the disaster preparedness training programs in the Department of Health-accredited Level I hospitals of Camarines Norte, focusing on improving resources, infrastructure, and funding to ensure comprehensive disaster readiness.

Keywords: Disaster Preparedness, Training program, Human resources, Policies and Programs

1. Introduction

Education and training regarding disaster prepare the hospital to meet emergent needs. Educational courses ensure the workers at a health institution can deal effectively, immediately, and soundly during severe emergencies by establishing in them skills, capability, and the kind of judgement necessary. Methods include role-plays, rehearsals of crises, on-field drills in simulators designed as equipment training programs or clinical situations mimicked. Yet sometimes the achievement of these initiatives can be challenged by practical problems, such as a lack of resources, organizational limitations, and differing levels of employee engagement.

Disaster preparedness means more than just knowing. It means having the right systems and skills in place so that people, institutions, and governments have the capacity to react to emergencies and recover afterwards. Communities and organizations take action in advance to improve their ability to cope with unexpected events. These can include things such as contingency planning, stocking supplies, exercising communications networks, raising public understanding, and conducting training exercises and practice runs. All these efforts endeavor to produce a smoother transfer from emergency response to long-term recovery (WHO, 2024). This study borrows globally accepted frameworks and policies that inform robust emergency response systems for health. One such reference is the Sendai Framework for Disaster Risk Reduction (2015–2030), and among its points of emphasis are enhancing risk governance, enhancing early warning systems, and investing in disaster risk reduction measures (UNDRR, 2024).

The World Health Organization's HOPE (Hospital Preparedness for Emergencies) framework also provides valuable guidelines for hospitals. It encourages better planning and risk assessments while emphasizing the need to keep essential services running during crises (WHO, 2024). Similarly, the International Health Regulations (2005) underscore the importance of preparedness in hospitals, especially in dealing with public health emergencies and infectious disease outbreaks (WHO, 2024).

This study also aligns with the targets of the United Nations Sustainable Development Goals (SDGs), specifically SDG 3 Good Health and Well-being and Target 3.D, which calls for stronger systems for disaster preparedness and response in the health sector. It also aligns with SDG 11, which supports building resilient cities and communities, including their infrastructure like hospitals, particularly in areas prone to disasters like Camarines Norte (United Nations, 2024). Around the world, disaster preparedness in hospitals continues to be a top priority. It requires innovative and practical approaches to reduce the impact of both natural disasters and human-caused crises. As Khirekar et al. (2023) pointed out, a hospital's ability to effectively respond in times of crisis hinges on careful planning, trained and ready personnel, and the availability of the right tools and equipment. Key issues that hospitals

must address include resource management, reliable communication systems, patient evacuation protocols, and ethical decision-making. Given the distinct nature of natural, technological, and human-induced disasters, tailored response strategies and well-developed emergency plans are imperative for effective disaster management. The role is crucial, relieving leadership, and decision-making to prioritize patient care. Strategies involve risk assessment, training, communication, and resource management, to mitigate the impact and ensure rapid response. Collaboration and community participation are key to successful disaster readiness, allowing hospitals to navigate various crises efficiently.

Likewise, the study is anchored on various national legal frameworks. The Republic Act No. 10121, or the Philippine Disaster Risk Reduction and Management Act of 2010, serves as the primary legal basis for disaster preparedness in hospitals. This law mandates all healthcare facilities, including DOH-accredited Level I hospitals, to establish comprehensive disaster risk reduction and management plans, conduct emergency drills, and ensure the continuity of essential health services during disasters (Robles, 2024).

In the past few years, several natural disasters have had devastating effects. Earthquakes, floods, and storms are only a few of which pose substantial threats to human lives, property, and infrastructure. The Philippines has already experienced comparable catastrophes having been a home of nine active volcanoes (Statista Research Department, 2022). With these recurring natural catastrophes, the country faces challenges in resilience and disaster preparedness. The government should then give greater priority to enforcing stronger regulations to lower physical dangers and use cutting-edge to lower the possibility of losses and damage. This requires allocating a larger budget for disaster preparedness and raising public awareness about it.

As the Philippines experienced the effect of climate change, it is important to anticipate a recurrent disaster in the following years. Since Camarines Norte is on the eastern coast of Luzon, its vulnerability to typhoons and other calamities might result in a devastating effect. Given this situation, a need to strengthen disaster response capabilities has become an important concern. The success of disaster response mostly depends on the preparedness and training of healthcare personnel and staff of hospitals, especially the primary hospitals. These institution's role is very important in the immediate response to medical assistance to affected areas during and after disasters.

Disaster preparedness in healthcare facilities is crucial in ensuring the safety of patients, hospital personnel, and the wider community during emergencies. As a nurse in a hospital in Camarines Norte and a certified First Aid and Basic Life Support (BLS) instructor and provider, the researcher has firsthand experience in emergency response and has witnessed the critical role of hospitals in disaster situations. Given that Camarines Norte is vulnerable to natural disasters such as typhoons, earthquakes, and flooding, as well as potential public health emergencies, the need for a well-structured disaster preparedness training program is paramount.

However, during disaster situations, there are often limited personnel available to perform disaster response, placing an overwhelming burden on the existing workforce. Despite existing hospital policies and response protocols, gaps in preparedness, resource allocation, and personnel training remain significant challenges that could hinder efficient disaster response. This study is essential as the findings served as the basis for the proposed policy recommendations to enhance the existing training program of the hospitals in Camarines Norte.

2. Methodology

2.1 Research Design

This quantitative study utilized the descriptive correlational design. According to McCombes (2023), descriptive research seeks to accurately and systematically portray a population, situation, or phenomenon. It addresses questions of what, where, when, and how, but does not explore why. This research design is suitable for examining one or more variables, particularly when the goal is to uncover characteristics, patterns, trends, or categories. Meanwhile, descriptive correlational research examines the relationship between two or more variables without making assertions about causality.

A descriptive research design is appropriate for this study as it sought to systematically evaluate the disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte as a basis for enhancement of the training program. It helped in identifying the current disaster preparedness as perceived by administrators and personnel and how these factors influence their preparedness. On the other hand, the correlational research design was used to examine the difference in the current disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte as perceived by administrators and personnel. Additionally, it explored the significant relationship between the current disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte and the factors influencing its disaster preparedness.

2.2 Respondents of the Study

It is essential to ensure that the selected respondents represent a diverse range of perspectives and roles within the context of disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte. Specifically, the respondents of the study are the total enumeration of 101 respondents, including 20 administrators who head various hospital departments and 81 personnel from the nursing service, laboratory, pharmacy, radiology, and ambulance services. The study specifically examined two key primary hospitals: Labo District Hospital and Capalonga Medicare and Community Hospital, both under the Provincial Government of Camarines Norte.

2.3 Research Instrument

The study on disaster preparedness in the Department of Health Level I accredited hospitals of Camarines Norte as a starting point for the improvement of the training program utilized a self-constructed questionnaire as the primary tool for data gathering.

Questionnaire. After a comprehensive literature review concerning the study's aims, a self-constructed questionnaire was crafted to gather information regarding disaster preparedness in the Department of Health accredited level I hospitals of Camarines Norte. Ponto (2019) describes a questionnaire as an instrument used for data collection in the form of a list of questions that attempt to obtain precise information from the respondents. It is widely applied in correlational and descriptive research to quantify variables enabling systematic and effective data collection from large populations. In this research, the questionnaire is used to gather quantitative information on disaster preparedness in Camarines Norte Department of Health accredited level I hospitals. This technique guarantees that the study encompasses a wide scope of views and opinions concerning the research goals.

2.4 Data Gathering Procedures

Preparation of the Questionnaire. The research employed a literature review and studies that acted as a reference when preparing the two-part questionnaire. The first component assessed the existing disaster preparedness in the Department of Health accredited Level I hospitals of Camarines Norte as seen by administrators and staff in terms of human resources, facilities and equipment, and policies and programs and the second component investigated the determinants of disaster preparedness in the Department of Health accredited Level I hospitals of Camarines Norte in terms of human resources, facilities and equipment, and policies and programs.

Validation of the Questionnaire. The initial draft of the questionnaire was submitted for evaluation to the research adviser, oral examination committee, and statistician, who provided feedback and recommendations for improvement. Upon securing their approval, the researcher conducted a pilot test involving five personnel from two primary hospitals who were not part of the study's target respondents. These individuals assessed the questionnaire's clarity, relevance, specificity, and language. Additionally, the instrument underwent reliability testing, which yielded an excellent level of internal consistency, confirming its effectiveness in accurately measuring the intended variables, with a Cronbach Alpha results of 0.98. Based on the insights gathered from the pilot test, necessary revisions were implemented to enhance the questionnaire's overall quality and usability.

Administration and Retrieval of the Questionnaire. To ensure the data collection process and once the permits for conducting the study are already approved, the researcher will personally distribute the questionnaire to the identified respondents of the study. This ensures the proper dissemination of the questionnaire and allows the researcher to address any queries raised by the respondents during the actual collection of data and to ease the retrieval of the questionnaire.

3. Results and Discussion

3.1 Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte as Perceived by Administrators and Personnel

a. Human Resources. Table 1 presents the assessment of the current state of disaster preparedness in Department of Health (DOH) Accredited Level I hospitals in Camarines Norte, specifically focusing on the human resources component. Both administrators and personnel perceive their hospitals as "Prepared" with an average weighted mean (AWM) of 2.93 and 3.33**,** respectively. However, their evaluations reveal notable disparities in perceived strengths and areas for improvement, which carry significant implications for the enhancement of disaster training programs. One of the highest-rated indicators by administrators (WM, 3.20) is the presence of a dedicated disaster management team, underscoring its centrality to preparedness efforts. Personnel also highlighted the regularity of disaster drills (WM, 3.54) as a key strength, demonstrating the importance of hands-on practice in ensuring staff readiness during emergencies. These findings imply that hospitals already prioritize foundational disaster preparedness measures, such as establishing teams and conducting drills, which can serve as a solid base for further program enhancements.

Additionally, personnel are trained in disaster preparedness and response protocols and staff are knowledgeable about their roles during disaster situations both considered by the administrators as the second highest rated indicators with weighted mean of 3.14. For the personnel, the indicator, hospital has a dedicated team for disaster management occupied the second rank with weighted mean of 3.52. Administrators rated the adequacy of medical personnel for managing disasters **(**WM, 2.95; Rank 8**)** and support personnel availability **(**WM, 2.91; Rank 9**)** as areas needing improvement. Personnel gave slightly higher scores for these indicators **(**WM, 3.39 and 3.36, respectively**),** but they remain areas for further focus. Administrators gave the lowest rating to "Personnel are given psychological support after disaster events" (WM, 2.57; Rank 15**),** suggesting a critical gap in addressing mental health needs post-disaster**.** Personnel also rated this indicator relatively low (WM, 3.18; Rank 11)**,** reflecting a similar concern but with a slightly more positive perception than administrators. On the other hand, the personnel gave the lowest rating "There is a process for the quick mobilization of additional staff during a disaster" and "Regular performance evaluations assess staff readiness for disaster situations" both with a weighted mean of 3.02.

The results of this assessment have several important implications for improving disaster preparedness in Level I hospitals. The low ratings for psychological support call for the integration of mental health programs into disaster training protocols. Facilitating access to post-disaster counseling services and stress management sessions can strengthen the emotional resilience and overall

mental health of hospital personnel. Staffing matters addressed through strategic human resource plans are essential for enhancing disaster preparedness.

Creating specialized rapid-response teams that are easily deployable when emergencies are encountered is a good strategy. Alternatively, medical facilities can also collaborate with other institutions in their vicinity to shore up their staffing during emergencies. These measures have the advantage of providing a capable pool of human resources when quick action is necessary in response to urgent situations. In addition, the research findings—specifically the mean scores concerning staff training and disaster awareness—emphasize the urgent need for thorough and uniform training programs. These should include skill-specific drills and practice exercises specific to the specific duties of each hospital department. These focused activities correct any gaps in preparedness and instill confidence in staff roles in emergency situations. A formal process of evaluation to measure employees' performance is equally important. Periodic evaluations can identify areas of improvement, serve as a platform for timely interventions, and sustain high levels of disaster preparedness. Internal communication is another area that must be developed.

While hospitals tend to see rudimentary systems such as emergency personnel and routine drills in their systems, communication procedures only scored moderately—suggesting coordination in high-stress events is still an area for improvement. In addition, elements such as support for staff from a psychological standpoint, proper staffing levels,

Table 1. Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte along Human Resources

Indicators	Administrators			Personnel		
	WM	VI	R	WM	VI	R
1. The hospital has a dedicated team for disaster management.	3.20	P	1	3.52	P	2
2. Personnel are trained in disaster preparedness and response protocols.	3.14	P	2.5	3.43	P	5.5
3. Regular disaster drills are conducted for all staff members.	3.05	P	5.5	3.54	P	1
4. Staff are knowledgeable about their roles during disaster situations.	3.14	P	2.5	3.38	P	8.5
5. The hospital has enough medical personnel to manage disasters.	2.95	P	8	3.39	P	7
6. All hospital staff receive annual training on disaster risk reduction.	2.70	P	14	3.50	P	3
7. The hospital employs personnel with specialized skills for emergency situations.	3.05	P	5.5	3.45	P	4
8. Adequate support personnel (e.g., security, and administrative staff) are available during disasters.	2.91	P	9	3.36	P	10
9. The hospital maintains a clear communication system among personnel during disasters.	3.09	P	4	3.43	P	5.5
10. Personnel are given psychological support after disaster events.	2.57	P	15	3.18	P	12
11. All departments have personnel specifically assigned to handle disaster-related responsibilities.	2.84	P	10	3.18	P	12
12. The hospital has a sufficient number of healthcare professionals on call for emergencies.	2.75	P	11.5	3.18	P	12
13. There is a process for the quick mobilization of additional staff during a disaster.	2.73	P	13	3.02	P	14.5
14. Regular performance evaluations assess staff readiness for disaster situations.	2.75	P	11.5	3.02	P	14.5
15. Staff are aware of the chain of command in disaster situations.	3.02	P	7	3.38	P	8.5
Average Weighted Mean	**2.93**	**Prepared**		**3.33**	**Prepared**	

and ongoing monitoring of performance are still missing. By re-examining and reinforcing training models and operational procedures, healthcare facilities can significantly enhance their emergency response capacity, ultimately serving both patients and staff.

These conclusions align closely with research by O'Sullivan et al. (2023), who focus on trauma-informed training which puts the mental well-being of the healthcare practitioners as well as the patients first. Their work reiterates that disasters not only cause physical trauma but also bring enormous emotional loads for responders; hence, preparedness plans should be supported with mental health services to foster resilience. In the same vein, Brooks et al. (2019) documented severe burnout, PTSD, and emotional exhaustion among emergency response healthcare professionals. They attributed these effects to lack of proper mental health services and suggested formal debriefings and psychological first aid training courses as post-disaster intervention components.

Schreiber et al. (2019) contributed to this discussion by pointing out that most hospitals continue to lack established mental health guidelines to aid their emergency staff, exposing workers to stress disorders after traumatic incidents. Further, the worries expressed by healthcare personnel in the current study regarding inadequate systems for prompt deployment and inconsistent performance appraisals reflect previous work by Fernandez (2019), who noted that even though nurses in her study were normally confident that

they were ready, there existed no effective system for quickly mobilizing them in the event of emergencies.

Likewise, Fallah-Aliabadi et al. (2022) emphasized that hospital resilience relies significantly on administrative effectiveness, such as logistics and finance management. Their study presented a tool for measuring disaster readiness in hospitals, highlighting the importance of efficient processes that permit rapid mobilization of staff and continuous assessment of staff capacity. To support this, Khankeh et al. (2024) promoted surge capacity training, especially for nursing managers, as a means to enhance readiness. The authors' results highlight the importance of regular performance reviews and specialized training sessions as major determinants of ensuring preparedness among hospital staff.

b. Facilities and Equipment. Table 2 evaluates the current disaster preparedness of Department of Health (DOH) Accredited Level I hospitals in Camarines Norte concerning facilities and equipment. Both administrators and personnel rated facilities and equipment as Prepared with an average weighted mean of 2.91 and 3.26, respectively, though personnel generally provided slightly higher ratings. The findings highlight areas of strength, as well as opportunities for improvement, that can guide the enhancement of disaster preparedness training programs. Both administrators (WM, 3.30) and personnel (WM, 3.49) identified clearly marked and accessible emergency exits and evacuation routes as the top strength. This indicates that hospitals prioritize physical safety measures for rapid evacuation during disasters, a critical element in minimizing casualties.

Personnel also highlighted the sufficient stockpile of medical supplies and equipment (WM, 3.44) as a key preparedness factor, reflecting the hospitals' proactive approach to resource readiness during emergencies. Reliable communication equipment was another moderately rated area, with personnel giving it a WM of 3.36 and administrators rating it with a WM of 2.84. This suggests that, while communication infrastructure is adequate, there may still be room for improvement in ensuring reliability under disaster conditions. Both groups also rated Adequate backup power systems are in place to ensure uninterrupted operations during disasters favorably, with administrators assigning a weighted mean of 2.98 and personnel a weighted mean of 3.35**.** This underscores the importance of ensuring uninterrupted operations during power outages, which are common in disaster scenarios. The lowest-rated indicators from administrators and personnel highlight several gaps in disaster preparedness. Both groups rated mobile medical units for external disaster response poorly, with administrators assigning a WM of 2.70 and personnel a WM of 3.16. The lack of mobile units may hinder the hospitals'

Table 2. Current Disaster Preparedness of Department of Health Accredited Level I Hospitals of Camarines Norte along Facilities and Equipment

Indicators	Administrators			Personnel		
	WM	VI	R	WM	VI	R
1. The hospital has an emergency command center for disaster management.	2.82	P	11	3.25	P	8.5
2. Adequate backup power systems are in place to ensure uninterrupted operations during disasters.	2.98	P	4.5	3.35	P	4.5
3. There is a sufficient stockpile of medical supplies and equipment for disaster situations.	3.00	P	3	3.44	P	2
4. The hospital has facilities designed to handle mass casualties.	2.75	P	13.5	3.20	P	10
5. Disaster equipment (e.g., stretchers, portable ventilators) is regularly maintained and checked.	2.93	P	6.5	3.25	P	8.5
6. The hospital's communication equipment is reliable during emergencies.	2.84	P	9.5	3.36	P	3
7. An emergency transportation system is available for disaster response.	3.20	P	2	3.11	P	14
8. The hospital has adequate water and sanitation facilities for prolonged disaster response.	2.75	P	13.5	3.16	P	12.5
9. The hospital has the capacity to handle a sudden surge of patients during disasters.	2.77	P	12	3.04	P	15
10. The structural integrity of the hospital is assessed regularly to withstand natural disasters.	2.98	P	4.5	3.18	P	11
11. Emergency exits and evacuation routes are clearly marked and accessible.	3.30	P	1	3.49	P	1
12. The hospital has mobile medical units for external disaster response.	2.70	P	15	3.16	P	12.5
13. Medical equipment is easily accessible and organized for quick deployment during disasters.	2.91	P	8	3.29	P	7
14. There are adequate isolation areas for infectious disease outbreaks during disasters.	2.93	P	6.5	3.33	P	6

15. The hospital maintains contracts with suppliers for immediate replenishment of medical supplies during emergencies.	2.84	P	9.5	3.35	P	4.5
Average Weighted Mean	**2.91**	**Prepared**		**3.26**	**Prepared**	

ability to extend care beyond their facilities, particularly in large-scale disasters affecting surrounding communities.

Another concern is the capacity to handle mass casualties, with administrators giving this indicator a WM of 2.75 and personnel a WM of 3.20. The ratings suggest that hospitals may lack the necessary facilities or resources to manage sudden surges of patients effectively. Water and sanitation facilities also received low scores from administrators (WM, 2.75) and personnel (WM, 3.16), indicating that these critical infrastructure components may not be sufficient for prolonged disaster responses.

This deficiency may result in hygiene-related problems during prolonged emergency situations. Both administrators and personnel gave relatively low ratings to the structural soundness of hospital buildings and the frequency of evaluations for disaster resistance (administrators WM = 2.98; personnel WM = 3.18). These ratings highlight the importance of conducting regular structural inspections to confirm that hospital facilities are equipped to endure natural calamities such as typhoons and earthquakes. The implications of these findings are critical for the disaster readiness of Level I hospitals. There is an urgent need to invest in mobile medical units, which would enhance the hospitals' ability to deliver healthcare services beyond the facility, especially in remote or severely affected areas during large-scale disasters. Expanding the ability to manage mass casualty events is also vital. This can be achieved by converting existing spaces for emergency use, increasing the availability of modular treatment units, or coordinating with partner institutions for the redistribution of patients during crises.

Improving access to clean water and proper sanitation remains a key concern. A reliable water supply and sufficient hygiene infrastructure are essential to uphold health standards in extended emergency conditions. Hospitals should consider investing in water storage solutions, treatment systems, and enhanced sanitation facilities to maintain safe and sanitary environments. Institutionalizing regular structural safety checks is crucial to ensure hospital infrastructure is resilient against natural disasters. Based on assessment outcomes, retrofitting and structural upgrades may be needed to address any identified weaknesses.

Furthermore, strengthening supply chain systems by securing agreements with multiple suppliers will help ensure that critical medical resources can be rapidly replenished during emergencies. Entering into contingency contracts with external vendors can reduce risks associated with supply disruptions. While Level I hospitals in Camarines Norte demonstrate solid preparedness in areas like emergency exits, stockpiled medical supplies, and communication protocols, notable weaknesses remain. These include limitations in external response capability, surge capacity, and building resilience. Targeted improvements in staff training, facility infrastructure, and logistics management are necessary steps toward building a more robust and effective disaster response system.

The results of this study are in contrast with the findings of Napallaton and Antone (2019) that in terms of the availability of facilities and equipment, all municipalities failed to provide important facilities as prescribed by the NDRRMC on the minimum requirements and standards for equipment such as alternative sources of energy, public address systems, pulling and lifting machines, and safety full-body harnesses.

c. Policies and Programs. Table 3 evaluates the disaster preparedness of Department of Health (DOH) Accredited Level I Hospitals in Camarines Norte regarding policies and programs. Both administrators and personnel rated the policies and programs as Prepared with an average weighted mean of 3.10 and 3.34, respectively. However, personnel generally provided higher ratings, indicating a slightly more favorable perception of the policies and programs in place. The participation in local government disaster preparedness programs was rated the highest by administrators

Table 3. Current Disaster Preparedness of Department of Health Accredited Level I Hospitals of Camarines Norte along Policies and Programs

Indicators	Administrators			Personnel		
	WM	VI	R	WM	VI	R
1. The hospital has a comprehensive disaster preparedness and response plan in place.	3.18	P	3	3.35	P	7.5
2. Policies regarding disaster response are regularly updated based on new guidelines and best practices.	3.16	P	4.5	3.33	P	9
3. There is a hospital-wide disaster response committee that meets regularly.	2.91	P	15	3.04	P	15
4. The hospital follows national guidelines for disaster preparedness set by the Department of Health.	3.30	P	2	3.27	P	10
5. A disaster risk reduction and management program is actively implemented in the hospital.	3.09	P	8.5	3.35	P	7.5
6. Policies for staff evacuation and patient safety during disasters are well-established.	3.00	P	12	3.25	P	11
7. The hospital participates in local government disaster preparedness programs.	3.32	P	1	3.47	P	4

8. The hospital has policies for rapid coordination with other healthcare facilities during disasters.	3.16	P	4.5	3.67	P	1
9. Emergency response procedures are reviewed and updated annually.	3.09	P	8.5	3.42	P	5.5
10. The hospital has a policy for the regular training of staff on disaster preparedness.	3.11	P	7	3.49	P	3
11. There are clear protocols for maintaining essential hospital services during a disaster.	3.02	P	10.5	3.15	P	13.5
12. The hospital has a disaster recovery plan to resume normal operations after an event.	3.02	P	10.5	3.20	P	12
13. Public information campaigns are part of the hospital's disaster preparedness program.	2.98	P	13.5	3.42	P	5
14. The hospital has established partnerships with local disaster response agencies.	3.14	P	6	3.55	P	2
15. The hospital conducts regular audits of its disaster preparedness policies and programs.	2.98	P	13.5	3.15	P	13.5
Average Weighted Mean	**3.10**	**Prepared**		**3.34**	**Prepared**	

(WM, 3.32) and ranked fourth by personnel (WM, 3.47). This suggests that hospitals actively engage with local authorities to align their disaster response efforts with broader community strategies. This capability is critical for efficient resource allocation and patient transfers in large-scale disaster scenarios. Personnel rated policies for rapid coordination with other healthcare facilities during disasters as the top strength (WM, 3.67), reflecting the hospitals' readiness for collaborative efforts during emergencies. Another strength identified was the policy for regular staff training on disaster preparedness, rated with a WM of 3.11 by administrators and a WM of 3.49 by personnel.

This highlights the importance of ongoing training to ensure that hospital staff are equipped with the necessary skills and knowledge to handle disaster situations effectively. The adherence to national guidelines for disaster preparedness set by the DOH also ranked high among administrators (WM, 3.30) and personnel (WM, 3.27), reflecting compliance with established standards that promote uniformity and effectiveness in disaster response. The hospital-wide disaster response committee, which is intended to facilitate coordination and decision-making during disasters, received the lowest ratings from both administrators (WM, 2.91) and personnel (WM, 3.04).

The findings suggest there may be a structural or operational gap within the organization that should be addressed to improve overall disaster preparedness. Notably, public information campaigns received a relatively low rating from administrators (Weighted Mean = 2.98), while healthcare staff provided a slightly higher yet still moderate score (WM = 3.42). This discrepancy points to the need for more robust and consistent community education and outreach strategies to better inform the public and foster disaster readiness. Both administrators and personnel also identified shortcomings in the regular review of disaster preparedness policies and programs. The administrators rated this aspect with a WM of 2.98, while staff gave it a 3.15—results that imply current evaluation efforts may be irregular or lack depth, limiting their effectiveness in uncovering critical gaps and guiding necessary reforms.

The hospital disaster response committee was another area that earned low marks, underscoring the need for structural improvements. For these committees to function effectively, they should represent all major departments, hold routine planning meetings, and be given clear authority to make decisions during emergencies. Providing leadership and emergency management training to committee members can also help strengthen coordination and response efforts during crisis situations.

Strengthening public preparedness should also be a priority. Hospitals could enhance their reach by leveraging various communication platforms—such as local radio, social media, and in-person community engagements—to disseminate crucial information and encourage public cooperation. At the same time, conducting systematic and periodic reviews of disaster management protocols can help pinpoint weaknesses and ensure current practices align with evolving standards. Establishing a dedicated team to handle these reviews and using the findings to update training modules and internal policies can significantly boost institutional preparedness.

While existing collaborations with nearby health facilities received relatively favorable scores, these partnerships can be further reinforced through formal agreements like Memorandums of Agreement (MOAs). Engaging in joint disaster drills with partner institutions will also foster better coordination and improve shared response capabilities. Continuous staff development remains essential, and training programs should be inclusive, scenario-based, and contextually relevant. Working with recognized disaster response organizations to provide expert-led training can enhance readiness across all levels of hospital staff.

On the whole, Level I hospitals in Camarines Norte, as recognized by the Department of Health (DOH), have shown strength in adhering to national disaster preparedness guidelines, maintaining inter-institutional partnerships, and participating in local disaster risk reduction efforts. However, targeted improvements are still needed particularly in strengthening internal committees, expanding community outreach, and institutionalizing regular policy evaluations. By investing in training, improving coordination between institutions, and advancing public awareness campaigns, hospitals can substantially improve their ability to respond effectively to

disaster situations.

These results contrast somewhat with those of Delos Santos et al. (2021), who observed that many provincial hospitals, despite having policies in place, often fail to coordinate effectively with local government units (LGUs). This lack of integration may lead to overcrowding and inefficiencies during emergencies. The authors advocate for greater collaboration through joint drills and disaster simulations involving LGUs, non-government organizations, and local partners. Likewise, the research of Fernandez et al. (2022) supports the idea that collaborative disaster preparedness across healthcare institutions enhances overall response capacity. Their study highlighted how joint efforts with emergency services, government bodies, and fellow health facilities improve coordination, resource sharing, and patient management during disaster events.

3.2. Factors Influencing Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte

a. Human Resources. Table 4 outlines the findings related to the role of human resources in disaster preparedness within the identified hospitals. Results indicate that human resources play a crucial role in shaping disaster readiness, with an overall average weighted mean of 3.18. Among the indicators, the highest-rated concern was the safety of healthcare workers, which received a weighted mean of 3.48. This emphasizes the importance of implementing protective measures to safeguard staff during disaster situations. Another significant factor was the need for personnel training, which scored 3.42, suggesting an urgent requirement for ongoing and structured disaster preparedness education and capacity-building among hospital staff. Challenges such as difficulty maintaining staffing levels during disasters (3.29) and limited budget allocation for hiring additional personnel (3.27) indicate resource-related constraints that hinder the hospitals' overall readiness. Other notable factors include staff turnover rates (3.23), unfamiliarity with disaster risk reduction protocols (3.21), and the absence of specialized disaster preparedness teams (3.20), all of which contribute to gaps in the hospitals' ability to respond efficiently to disasters.

Lower-rated aspects, such as limited communication among staff (weighted mean: 2.96) and issues related to fatigue and burnout (weighted mean: 3.09), although less pressing, remain important areas for improvement to build long-term resilience. Enhancing disaster preparedness should begin by prioritizing the protection of healthcare personnel. Hospitals can address this by establishing comprehensive safety guidelines, ensuring access to proper protective gear, and offering insurance coverage to help

Table 4. Factors Influencing Disaster Preparedness of Department of Health Accredited Level I Hospitals of Camarines Norte along with Human Resources

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The hospital experiences challenges in recruiting personnel with disaster management skills.	3.16	Influence	8.5
2. Staff turnover rates negatively impact disaster preparedness.	3.23	Influence	5
3. There is a lack of training programs focused on disaster preparedness for hospital personnel.	3.05	Influence	13.5
4. The hospital has difficulty maintaining sufficient staffing levels during disaster situations.	3.29	Influence	3
5. Healthcare personnel are often not familiar with disaster risk reduction protocols.	3.21	Influence	6
6. There is inadequate allocation of staff for disaster response roles.	3.06	Influence	11.5
7. A lack of clear communication among personnel hinders disaster preparedness efforts.	2.96	Influence	15
8. The hospital struggles to provide continuous disaster-related education to all employees.	3.16	Influence	8.5
9. Fatigue and burnout among staff impact their ability to effectively respond to disasters.	3.09	Influence	10
10. Limited budget allocation affects hiring additional personnel for disaster management.	3.27	Influence	4
11. The absence of a specialized disaster preparedness team reduces the hospital's readiness.	3.20	Influence	7
12. Healthcare workers' personal safety concerns influence their participation in disaster response.	3.48	Influence	1
13. Staff lack awareness of available mental health support during and after disaster events.	3.05	Influence	13.5
14. Cross-departmental collaboration among personnel is weak during disaster preparedness activities.	3.06	Influence	11.5
15. High demand for personnel training leaves critical gaps in disaster	3.42	Influence	2

response readiness.

Average Weighted Mean	**3.18**	**Influence**

reassure workers about their safety during emergency situations. These actions can help build trust and encourage more active participation in disaster response initiatives.

Another essential focus is the creation of well-structured and consistent training programs. These should encompass disaster protocols, risk mitigation techniques, and strategies for interdepartmental coordination. Incorporating practical exercises such as simulations and scenario-based activities can help hospital staff develop confidence and preparedness in real disaster conditions. Staffing remains a crucial challenge—especially during emergencies, when maintaining adequate personnel and minimizing staff attrition becomes more difficult. Hospitals may need to adopt more adaptable staffing models, introduce financial support or incentives, and push for increased budget allocations to recruit additional professionals trained in disaster response. Equally important is the promotion of effective teamwork and communication. Organizing interdepartmental drills and activities aimed at team building can strengthen collaboration and ensure a unified approach to emergency response.

To mitigate burnout and exhaustion, it is vital to incorporate wellness initiatives, mental health services, and stress reduction strategies into daily hospital routines. Establishing dedicated disaster preparedness units with clearly assigned tasks can also improve coordination and streamline response operations during crises. These teams should lead disaster management activities and provide organized leadership throughout emergency situations. By taking a comprehensive and strategic approach to these areas, hospitals can strengthen their ability to respond to disasters and protect both healthcare providers and patients. The findings of this research support those of Nafar et al. (2021), who conducted a systematic review exploring the factors affecting healthcare workers' willingness to report for duty during emergencies. The study highlighted that psychological stress, health-related concerns, and the quality of relationships between administrators and staff significantly affect workforce readiness. These insights reinforce the importance of addressing the well-being and safety of healthcare workers as a core element of effective disaster preparedness.

b. Facilities and Equipment. Table 5 presents the evaluation of factors influencing disaster preparedness from the perspective of hospital facilities and equipment in Department of Health-accredited Level I hospitals in Camarines Norte. The overall average weighted mean (AWM) of 3.23 indicates that facilities and equipment significantly influence disaster preparedness. The highest-rated factor (WM, 3.38) highlights the critical role of maintaining disaster-related equipment. Poor maintenance reduces operational efficiency and delays emergency response, emphasizing the need for scheduled maintenance protocols. Insufficient hospital facilities for accommodating large numbers of patients (WM, 3.33) and outdated medical equipment (WM, 3.33) ranked second.

These findings suggest a need for facility upgrades and modernization to meet disaster demands. The lack of adequate mobile medical units (WM, 3.32) ranked fourth. These units are essential for extending disaster response beyond hospital boundaries. The unavailability of vehicles for emergency evacuations (WM, 3.30) underscores logistical gaps in disaster response. Reliable transportation is crucial for patient transfers and resource mobilization.

Limited funding impacting the acquisition of modern disaster equipment (WM, 3.29) reflects the persistent challenge of budgetary constraints in improving disaster

Table 5. Factors Influencing Disaster Preparedness of Department of Health Accredited Level I Hospitals of Camarines Norte along with Facilities and Equipment

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
The hospital's current facilities are insufficient to accommodate a large number of patients during disasters.	3.33	Influence	2.2
Limited funding affects the acquisition of modern disaster response equipment.	3.29	Influence	6
The lack of regular maintenance of disaster-related equipment reduces operational efficiency.	3.38	Influence	1
There are gaps in securing backup power sources during emergencies.	3.09	Influence	15
Poorly designed evacuation routes hamper efficient disaster response.	3.11	Influence	14
A shortage of medical supplies and resources limits the hospital's ability to manage disasters.	3.18	Influence	10
Communication devices (e.g., radios, telephones) are unreliable in emergency situations.	3.14	Influence	12.5
The hospital lacks space for triage and emergency services during disaster events.	3.20	Influence	8.5
9. Inadequate storage facilities prevent stockpiling of disaster-related medical supplies.	3.17	Influence	11
The unavailability of transportation vehicles for emergency evacuation impacts disaster response.	3.30	Influence	5

There are no isolation wards available for managing infectious diseases during disasters.	3.14	Influence	12.5
The hospital has mobile medical units for external disaster response.	3.25	Influence	7
Outdated medical equipment slows the hospital's response to disasters.	3.33	Influence	2.5
The hospital has inadequate access to mobile medical units for external disaster response.	3.32	Influence	4
Building infrastructure is not regularly assessed for disaster resilience.	3.20	Influence	8.5
Average Weighted Mean	**3.23**	**Influence**	

preparedness infrastructure.

The hospital has mobile medical units for external disaster response (3.25); The hospital lacks space for triage and emergency services during disaster events (3.20); and Building infrastructure is not regularly assessed for disaster resilience (3.20) were also rated as factors that Influence facilities and equipment. Shortages in medical supplies (WM, 3.18) and Inadequate storage facilities (WM, 3.17) highlight logistical weaknesses in stockpiling and resource management for disasters. Unreliable communication devices (WM, 3.14) and the lack of isolation wards for managing infectious diseases during disasters (WM, 3.14) reveal critical vulnerabilities in communication and infection control during emergencies Backup power source gaps (WM, 3.09) and poorly designed evacuation routes (WM, 3.11) ranked lowest.

These are critical components of disaster readiness that need immediate attention to avoid operational disruptions and ensure safe patient and staff movement. Scheduled maintenance protocols must be implemented for disaster-related equipment to ensure operational readiness. This includes establishing maintenance teams and allocating a dedicated budget for repairs and replacements. Hospitals need to upgrade outdated medical equipment and expand facilities to accommodate a surge in patients during disasters. Partnerships with government and private sectors can provide financial and logistical support for modernization. Regular assessments of hospital building infrastructure for disaster resilience are crucial. Hospitals need to revisit their evacuation plans in order to enhance safety and operational efficiency during emergency situations. Increasing the number of mobile medical units and ambulances is vital in order to enhance external response capacity. Entering into partnership with local government units (LGUs) may also assist in complementing hospital resources during critical situations.

Obtaining additional funding for disaster preparedness in particular is crucial to being able to obtain current equipment, expand storage facilities, and maintain required stockpiles. This requires direct advocacy with policymakers so that disaster preparedness is given priority in health care funding determinations. Having reliable communication infrastructure—emergency radios and backup systems—is important in ensuring coordination and continuity in times of disaster events. Moreover, having specified isolation areas and enforcing emergency disease management protocols will highly improve readiness against health-related crises, including potential outbreaks.

Facilities and equipment constitute a central element of the overall disaster preparedness plan of Level I hospitals in Camarines Norte. As much as there is an unmistakable institutional commitment to preparedness, concerns about equipment maintenance, infrastructure constraints, and supply chains continue to represent important obstacles. Through placing emphasis on making strategic investments and enhancing surrounding policies, hospitals can enhance their resilience as well as to respond well to disaster scenarios. These insights are in line with the findings of Al-Shareef et al. (2023), whose scoping review of hospital disaster preparedness highlighted the need to keep medical and laboratory equipment that is crucial for diagnosis and treatment in good condition. The research emphasized that creating detailed disaster preparedness plans and following regular maintenance practices are essential to ensure equipment is operational during emergencies. Their work supports the argument that lack of maintenance can interfere with emergency operations and slow care delivery.

c. Policies and Programs. Table 6 highlights the factors influencing disaster preparedness in terms of policies and programs in Department of Health Accredited Level I Hospitals in Camarines Norte. The overall average weighted mean of 3.12 indicates that the hospitals' policies and programs significantly influence their disaster preparedness, though with considerable areas for improvement. The highest-ranked factor (WM, 3.41) reflects that inadequate funding allocation hinders the development and implementation of robust disaster management programs.

This emphasizes the critical need for financial prioritization in hospital preparedness. The lack of clear protocols for mobilizing resources during disasters (WM, 3.30) ranks second. This gap can delay response efforts and compromise the efficiency of disaster management. Limited collaboration with external healthcare facilities (WM, 3.23) is a significant challenge, as it restricts coordinated responses and resource sharing during disasters. Challenges in maintaining active disaster preparedness committees (WM, 3.20) ranked fourth, indicating a lack of consistent leadership and focus in preparedness efforts. The difficulty in regularly updating disaster preparedness programs (WM, 3.16) highlights the need for routine evaluations and revisions to align with evolving risks and best practices. Emergency response procedures are not reviewed or revised frequently (3.13), ranked sixth. The absence of hospital-specific disaster response drills (WM, 3.10) ranked seventh. Drills are essential for testing and refining emergency

response plans. The hospital has limited public awareness campaigns on disaster preparedness (3.07); There is insufficient alignment between hospital disaster plans and national disaster preparedness guidelines (3.06); the lack of comprehensive disaster preparedness policies (WM, 3.03); Limited interdepartmental coordination (WM, 3.03) indicate policy gaps that reduce overall readiness.

The absence of standardized policies for mass casualty management (WM, 3.02) reflects internal communication and operational gaps. The lack of policies for integrating disaster management into routine hospital operations (WM, 3.02) suggests that disaster preparedness is often treated as an isolated initiative rather than an ongoing priority. The absence of regular audits and evaluations (WM, 3.00) indicates a lack of accountability and continuous improvement mechanisms in disaster preparedness policies. The lowest rated indicator was There is no clear policy on coordinating with local government units during disasters (2.95) still influence the disaster preparedness along policies and programs. Advocacy for increased funding allocation specific to disaster management programs is critical. Policymakers should prioritize disaster preparedness as an essential component of healthcare services. Hospitals should develop and implement comprehensive disaster preparedness policies that align with national and international guidelines, covering all types of emergencies. Clear protocols for resource mobilization during disasters must be established to ensure swift and efficient responses.

Forging partnerships with local government units (LGUs), surrounding health centers, and disaster response agencies can allow resource aggregation and ensure harmonized disaster response efforts. Disaster preparedness committees must be present in hospitals with clearly outlined tasks and supported through regular training and leadership development activities. Mandatory drills and simulation exercises at hospitals are critical to test and improve response procedures. Incorporating disaster management into routine hospital operations is crucial to transition from a reactive position to a proactive and long-term readiness system. Encouraging public education through

Table 6. Factors Influencing Disaster Preparedness of Department of Health Accredited Level I Hospitals of Camarines Norte along Policies and Program

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The hospital lacks a comprehensive disaster preparedness policy that covers all types of emergencies.	3.03	Influence	10.5
2. There is insufficient alignment between hospital disaster plans and national disaster preparedness guidelines.	3.06	Influence	9
3. The absence of hospital-specific disaster response drills leads to unpreparedness during actual events.	3.10	Influence	7
4. The hospital faces challenges in updating its disaster preparedness programs regularly.	3.16	Influence	5
5. Inadequate funding allocation for disaster management programs affects hospital readiness.	3.41	Influence	1
6. There is no clear policy on coordinating with local government units during disasters.	2.95	Influence	15
7. The hospital has limited public awareness campaigns on disaster preparedness.	3.07	Influence	8
8. The lack of collaboration with external healthcare facilities limits effective disaster response.	3.23	Influence	3
9. Emergency response procedures are not reviewed or revised frequently.	3.13	Influence	6
10. There are no policies in place for integrating disaster management into routine hospital operations.	3.02	Influence	12.5
11. The hospital struggles to maintain an active disaster preparedness committee.	3.20	Influence	4
12. There is a lack of standardized policies for managing mass casualties during disasters.	3.02	Influence	12.5
13. Limited interdepartmental coordination hinders the implementation of disaster preparedness programs.	3.03	Influence	10.5
14. The absence of regular audits and evaluations weakens the effectiveness of disaster preparedness policies.	3.00	Influence	14
15. There is a lack of clear protocols for the mobilization of resources during disaster events.	3.30	Influence	2
Average Weighted Mean	**3.12**	**Influence**	

awareness campaigns on disaster preparedness can also enhance community participation and resilience, effectively complementing

hospital efforts.

Policies and institutional initiatives are the building blocks in determining the response of Level I hospitals in Camarines Norte to disasters. Although there are already many systems in existence, gaps exist—specifically in funding, resource deployment, inter-agency coordination, and regular policy enforcement. To enhance preparedness, there is a need to enhance existing policies, undertake regular assessments, and consolidate inter-sector collaborations. These insights are in agreement with the research of Fukuda et al. (2021), who noted that hospitals with extensive disaster preparedness programs are far more effective at managing unexpected patient surges and sustaining critical operations in times of crisis. Such programs typically include regular drills, strategic planning seminars, and staff training on triage systems and resource management. Fukuda and co-authors also stressed the importance of interdisciplinary training methods that engage all staff—from clinical personnel to administrative staff—such that a concerted and effective response to different kinds of disasters can be achieved. Coordination with regional and local emergency services is likewise important so that hospital preparedness plans can be integrated smoothly into wider disaster response systems.

3.3. Difference in the Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte as Perceived by Administrators and Personnel

This section presents the results on the difference in the perceptions of administrators and personnel regarding the current disaster preparedness of Department of Health Accredited Level I Hospitals in Camarines Norte across three areas: human resources**,** facilities and equipment**,** and policies and programs as reflected in Table 7**.** The interpretation of results is anchored in the t-test outcomes and corresponding p-values, utilizing a 0.05 significance threshold. A notable variation in perceptions concerning human resources was identified, with a t-value of 5.46 and a p-value of 0.019, indicating statistical significance. This suggests a mismatch between how administrators and personnel view staffing levels and disaster preparedness training. While administrators may believe that current staffing is adequate and personnel are sufficiently trained, those working on the ground may experience staffing shortages or lack sufficient preparation. This inconsistency points to the importance of improved communication and collaborative assessments to better align training and staffing strategies with actual needs.

Likewise, a statistically significant difference in perceptions was also evident regarding facilities and equipment, supported by a t-value of 4.29 and a p-value of 0.038. Administrators might rely on documented inventories to assess resource adequacy, whereas frontline staff often judge equipment based on usability and availability during crises. Problems such as malfunctioning tools, insufficient supplies, or poorly designed evacuation routes could explain this gap.

To close this divide, hospitals should focus on regular maintenance, equitable distribution of resources, and include staff feedback in procurement and planning decisions. On the other hand, no significant difference emerged in relation to hospital policies and programs, as reflected by a t-value of 2.01 and a p-value of 0.156, which is above the threshold for significance. This indicates that both administrators and healthcare workers generally agree on the presence and value of disaster-related policies. However, such agreement may not necessarily translate to effective implementation. Issues such as outdated procedures, budgetary constraints, and weak interdepartmental coordination could still hinder policy effectiveness. Frequent reviews, interdepartmental cooperation, and realistic drills may help bridge the gap between policy and practice.

Table 7. Difference in the Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte as Perceived by Administrators and Personnel

Indicators	Computed t-test	p-value @0.05	Decision on Ho	Interpretation
a. Human Resources	5.46	0.019	Rejected	Significant
b. Facilities and Equipment	4.29	0.038	Rejected	Significant
c. Policies and Programs	2.01	0.156	Accepted	Not Significant

These results underscore the need for concerted and strategic effort in disaster readiness. Disagreements between leaders and employees demonstrate potential communication failures, resource allocation, and emergency readiness planning breakdowns. Overcoming these issues through collaborative planning sessions, scheduled training, and open resource deployment may improve the overall capability of hospitals to cope with emergencies. In addition, putting institutional policies on par with national standards and the promotion of culture based on readiness will lead to a stronger health system. Tapping these revelations in developing enhanced training frameworks will enable Department of Health-accredited Level I hospitals in Camarines Norte to develop more coherent and effective response systems during disaster—ultimately safeguarding patients and healthcare practitioners alike during emergencies. In contrast to the findings of the current study, Alghanim (2021) employed a one-way ANOVA and discovered

considerable differences in hospital disaster preparedness capabilities such as planning, structural, managerial, and personnel competencies among Riyadh, Jeddah, and Dammam hospitals, with Riyadh-based institutions being the most prepared.

4. Relationship Between the Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte and the Factors Influencing Its Disaster Preparedness

This section examined the relationship between disaster preparedness in the Department of Health (DOH) Accredited Level I Hospitals of Camarines Norte and the factors influencing it, namely; human resources, facilities and equipment, and policies and programs. The results shown in Table 8 reveal that none of these factors have a statistically significant relationship with the current disaster preparedness of the hospitals. With a computed t-test value for human resources of -0.373 and a p-value of 0.710, higher than 0.05 level of significance suggest no significant relationship between disaster preparedness and human resources.

Although human resources are essential in managing disaster response efforts, the findings suggest that overall preparedness may be shaped by additional, unmeasured factors such as support from the local community or assistance from external agencies during emergencies. The absence of a statistically significant relationship also indicates a possible gap between how staff perceive their readiness and the hospital's broader disaster response framework. This points to the need for reassessing current training initiatives and human resource strategies to better reflect the realities faced during actual emergencies.

Table 8. Relationship Between the Current Disaster Preparedness in the Department of Health Accredited Level I Hospitals of Camarines Norte and the Factors Influencing Its Disaster Preparedness

Indicators	Computed t-test	p-value @ 0.05	Decision on Ho	Interpretation
a. Human Resources	-0.373	0.710	Accepted	Not Significant
b. Facilities and Equipment	-1.366	0.175	Accepted	Not Significant
c. Policies and Programs	1.194	0.235	Accepted	Not Significant

Regarding facilities and equipment, the computed t-value of -1.366 and the p-value of 0.175, which exceeds the 0.05 threshold for significance, indicate no notable link with disaster preparedness. While having infrastructure and equipment in place is important, this result suggests that their presence alone does not ensure preparedness. More crucial may be their operational condition, availability during crises, and how effectively they are positioned and utilized. This finding emphasizes the need for regular maintenance, strategic planning, and context-specific deployment of resources to maximize their impact during emergencies. Similarly, the policies and programs variable produced a t-value of 1.194 with a p-value of 0.235, also failing to reach statistical significance. This implies that simply having formal policy and preparedness programs on books is not the same as being truly ready. The absence of strong correlations for all three variables gives us a greater insight: disaster preparedness seems to be determined by some complicated interdependent set of factors rather than by one factor in particular. Other contributors—such as collaborative efforts with other agencies, community engagement, and strong leadership within the hospital—might be equally or more significant in determining readiness levels. These results contend for a more integrated model of preparedness that takes into account how different systems interact to facilitate successful disaster response.

To bridge these gaps, hospitals should implement a comprehensive disaster preparedness framework. This involves synchronizing staff training with realistic response scenarios, optimizing equipment use, and ensuring that existing policies are not only well-documented but also actionable and adaptable to evolving needs. These conclusions form the groundwork for developing a robust training initiative that responds to the specific conditions of Department of Health–Accredited Level I Hospitals in Camarines Norte.

To support these findings, Kim et al. (2021) discovered that regular and continuous disaster training was more effective in ensuring healthcare personnel maintained key skills, indicating that yearly drills are not enough by themselves. Adding to this, Bhalla et al. (2020) emphasized the importance of integrating disaster preparedness into daily hospital routines, suggesting that preparedness is best when it is viewed as an ongoing organizational priority and not a sporadic occurrence. Contrary to these findings of the present study, Alghanim (2021) also recorded a positive high correlation between preparedness for response to disaster and hospital readiness factors such as planning, infrastructure, operational functions, and competency in staff, reinforcing the importance of an overall ready preparedness system.

4. Conclusions

4.1. Both administrators and staff generally agree that disaster preparedness involves three core areas such as human resources, facilities and equipment, and policies and programs. Most hospitals have designated disaster management teams, conduct emergency drills regularly, and maintain accessible evacuation routes. They also collaborate with local disaster response efforts and have

existing protocols for coordinating with other healthcare facilities during crisis situations.

4.2. Despite these measures, several barriers persist. Among them are healthcare workers' concerns for their personal safety, lack of upkeep for disaster-response equipment, and limited funding allocated to emergency preparedness programs.

4.3. There are notable differences in how administrators and personnel assess preparedness in terms of staffing and equipment, although their views on policies and programs are generally aligned.

4.4. Statistical analysis revealed no significant relationship between disaster preparedness and the main influencing factors; namely, human resources, infrastructure, equipment, and institutional policies. This suggests that while these elements are essential, their presence alone may not directly translate to improved readiness without proper integration and consistent application.

4.5. To address these gaps, this study proposes targeted policy recommendations aimed at strengthening preparedness training and support systems in Level I hospitals. Enhancing resource allocation, upgrading infrastructure, and fostering inter-agency collaboration are among the key areas identified for development.

5. Recommendations

5.1. Each hospital should create a designated team focused on disaster preparedness and response. This group should be responsible for organizing regular emergency drills that simulate diverse disaster scenarios. Training sessions must encompass not only physical preparedness but also mental well-being, including strategies for managing stress and trauma. Hospitals should implement scheduled inspections and maintenance of emergency tools and equipment. Structural enhancements such as using fire-retardant materials and installing emergency power systems may be prioritized. Upgrading communication channels will also play a vital role in ensuring seamless coordination during crises.

5.2. Strengthening partnerships with local government units (LGUs) and non-governmental organizations (NGOs) is essential to augment hospital resources and expand response capabilities. Integrating hospital preparedness strategies into the wider local disaster risk reduction and management (DRRM) plans can foster unified and effective emergency actions. Establishing formal resource-sharing agreements among institutions can reinforce collective response efforts, especially in large-scale disaster scenarios.

5.3. Ensuring the protection and well-being of medical staff must be prioritized. This includes conducting routine safety drills, supplying adequate personal protective equipment, and providing psychological support such as first aid for mental health. Hospitals are also encouraged to seek funding support from public and private sectors to sustain preparedness efforts. Introducing a monitoring and evaluation system will enable continuous improvement of current disaster management practices.

5.4. Notable differences in how administrators and staff assess disaster readiness point to the need for more cohesive communication. Organizing joint planning sessions, shared training programs, and regular consultation platforms will help ensure that both management and frontline workers share common goals. Active engagement from all levels of the organization in planning and periodic evaluations will support a more unified and effective preparedness culture.

5.5. Given the absence of statistically significant links between disaster preparedness and its perceived influencing factors, hospitals should undertake more detailed qualitative evaluations. This approach will help uncover less visible vulnerabilities in current strategies. Emphasis should remain on strengthening contingency protocols, refining training programs, and maintaining key infrastructure and equipment. A more systemic and integrated policy framework is needed to address the multifaceted nature of disaster preparedness.

5.6. Preparedness training programs should be customized based on each hospital's specific risk profile and context. Regular skills assessments will ensure staff remain equipped to handle emergencies. Institutional policies may be revised to mandate that a fixed portion of hospital budgets be allocated toward disaster training and preparedness infrastructure. This will help sustain and institutionalize a culture of readiness across all healthcare facilities. Preparedness training programs may be customized based on each hospital's specific risk profile and context. Regular skills assessments will ensure staff remain equipped to handle emergencies. Institutional policies may be revised to mandate that a fixed portion of hospital budgets be allocated toward disaster training and preparedness infrastructure. This will help sustain and institutionalize a culture of readiness across all healthcare facilities.

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