

# EXPERIENCE ON DISASTER PREPAREDNESS AND RESPONSES AMONG THE STAFF NURSES WORKING IN EMERGENCY DEPARTMENT OF SELECTED HOSPITAL AT GUWAHATI, ASSAM

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**Abstract:** **Introduction:** Emergency staff nurses play a vital role in disaster situations, often serving as first responders in high-pressure environments. Disaster preparedness encompasses not only clinical skills but also knowledge of emergency protocols, coordination, and psychological readiness. However, variations in training, experience, and institutional support can impact nurses' confidence and competence during actual disaster events. **Objectives:** To determine the experience on disaster preparedness and response among the staff nurses working in emergency department. **Methodology:** Qualitative research approach was adopted for the study. 12 emergency staff nurses were selected using purposive sampling technique from 2 selected hospitals of Guwahati, Assam. Data were gathered through interview method using Socio demographic proforma and Semi-structured interview questionnaires. The gathered data was analyzed through thematic analysis using Clarke and Braun 6 steps thematic analysis. QDA Miner Lite was used for the analysis. **Result:** The findings revealed 6 major themes. 15 sub-themes were identified i.e. need for continuous disaster risk management training, psychological impact on the nurses, the unpredictability of the disaster, educators and trainers role in disaster training, nurses professional practice, drills and training, inadequate capacity building and infrastructural capacity, nurses professional experience, lack of collaborative management by the nurse manager, team dynamics, co-ordination and collaboration in disaster response, importance of leadership in disaster situation, hospital disaster plan, communication, change in learning attitude and disaster preparedness behaviors of the nurses, advancement in the technology. **Conclusion:** Determining the experiences of the emergency staff nurses on disaster preparedness and response is essential for promoting disaster preparedness and improving efforts on disaster response, ensuring of appropriate critical care and safety for the patients. The findings can be used by the nursing leaders, government, healthcare policy makers which can help and support nursing workforce.

**Key words-** Experience, Disaster preparedness and response, Emergency staff nurses.

## INTRODUCTION

According to United Nation report on General Assembly, they defined Disaster as "A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts".<sup>1</sup>

"A catastrophe, mishap, calamity, or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property or damage to, or degradation of the environment, and is of such a nature or magnitude as to be in addition to the coping capacity of the community of the affected area," according to the Disaster Management Act of 2005.<sup>2</sup>

Over 350 natural disasters were reported worldwide in 2023, killing over 95,000 people, hurting over 185 million people, and generating economic damages of over \$280 billion USD, according to the United Nations Office for Disaster Risk Reduction (UNDRR).<sup>3</sup>

India is susceptible to earthquakes, landslides, avalanches, floods, droughts, cyclones, tsunamis, urban flooding, cyclones, tsunamis, and forest fires to varying degrees because of its distinct geoclimatic and socioeconomic circumstances. 27 of the nation's 36 states and Union Territories (UTs) are prone to natural disasters, 58.6% of the landmass is vulnerable to extremely powerful earthquakes; Of the 7,516 km of coastline are vulnerable to cyclones and tsunamis; 68% of the arable land is susceptible to drought; 15% of the landmass is susceptible to landslides; and 12% of the land is susceptible to floods and river erosion. Urban flooding is a concern for 5,161 Urban 1 Local Bodies (ULBs). These events have highlighted the necessity of bolstering mitigation, readiness, and response strategies.<sup>4</sup>

According Hindustan Times report in July 2024, floods affected 2.4 million (24 lakh) people across 30 districts, resulting in 52 fatalities; Dhubri was the hardest hit, with 775,000 individuals affected and 3,627 people in relief camps.<sup>5</sup> The Meghalaya Express Reported Floods in June 2025 spread across 21 districts, impacting 6.33 lakh people, inundating 14,739 ha of cropland; 223 relief camps operated, sheltering nearly 40,000 people.<sup>6</sup>

The term "Disaster preparedness" describes the collection of actions and procedures taken to lessen the impact that major disasters—such as hurricanes, floods, earthquakes, and their effects on people, businesses, and communities. It encompasses the development of emergency plans, assembling kits specifically made to accommodate various calamities and situations, and also keeping track of supplies, and holding frequent training sessions.<sup>7</sup>

According to UNGA (2016), Disaster response refers to “Actions taken directly before, during, or immediately after a disaster to save lives, reduce health impacts, ensure public safety, and meet the basic subsistence needs of the people affected”.<sup>1</sup> It covers alerting as well as evacuation, rescuing and searching, administering first aid right away, assessing and evaluating damages and destructions, providing aid, and building or restoring infrastructure as soon as possible.<sup>8</sup>

Natural and man-made disasters pose major threats to lives, infrastructure, economies, and ecosystems. They often strike without warning, leading to extensive destruction. Effective disaster planning and response are essential, especially given the increasing frequency and severity of these events, partly due to climate change and urbanization. Every disaster impacts individuals, communities, and nations, causing fatalities and structural damage. Nurses, being integral to the healthcare system, must be prepared to handle mass casualties. Disaster management nursing requires expertise, critical thinking, collaboration, flexibility, coordination, advocacy, and leadership. Nurses' critical thinking skills are vital for providing care in both individual and mass casualty situations which exceeds the usual role of nurses.

## NEED OF THE STUDY

The World Health Organization's Six-year Strategy for the Health sector and Community Capacity Development report states that if populations in high-risk locations and national and local authorities are well-prepared and able to lower the magnitude of their vulnerabilities and the health consequences of their risks, the health effects of emergencies and crises can be significantly minimized. The hurdle lies in establishing systematic capabilities that can quantifiably lower future risks and losses, such as plans, laws, coordination processes and procedures, institutional capacity and budgets, knowledgeable employees, information, and public involvement and awareness.<sup>9</sup>

According to the World Health Organization (2021), nurses and midwives are responsible for managing over 70% of health-related tasks during disaster response, underscoring their critical role in emergency preparedness and relief efforts.<sup>10</sup> A global survey conducted by the International Council of Nurses (ICN) in 2022 found that only 45% of nurses had received formal disaster preparedness training.<sup>11</sup>

Additionally, A study conducted by Lee Y, Anwar E, Santos J, et al. (2023) on Disaster preparedness and perceived readiness among emergency nurses in low- and middle-income countries: a cross-sectional study reported that over 60% of emergency department nurses in low- and middle-income countries felt unprepared to manage large-scale disaster events, highlighting a critical gap in global nursing disaster readiness.<sup>12</sup>

A multinational study published in the Journal of Emergency Nursing (2023), involving over 9,000 nurses, found that more than 60% of emergency department nurses felt unprepared to manage disaster situations, particularly those involving mass casualties, hazardous materials, or infectious disease outbreaks. Additionally, fewer than 30% of respondents had ever participated in a full-scale disaster drill, highlighting critical gaps in practical disaster preparedness training.<sup>13</sup>

Farokhzadian Jamileh, Shahrabaki Mangolian Parvin, Farahmandnia Hojjat, et.al (2024) conducted a qualitative study on Nurses' Challenges for Disaster Response. The study conducted a content analysis with 24 nurses from emergency departments in Kerman, Iran, using purposive sampling. Five subcategories were 5 identified: moral tension in disaster situations, diverse nursing conditions, inadequate interactive platforms, obstacles to teamwork, and insufficient training in disaster risk management. The main finding was that nurses have an insufficient ability to respond to disasters. The study emphasized that improving disaster response, enhancing preparedness, optimizing patient care, and reducing emotional exhaustion in nurses requires understanding their challenges during emergencies.<sup>14</sup>

In disasters, nurses are vital as first responders, triage officers, and care providers, often working with limited resources. Their effectiveness in healthcare during crises relies on essential skills and competencies. Recognizing ongoing health threats, the World Health Organization and the International Council of Nurses emphasize the urgent need to enhance nurses' capacities to protect populations, reduce injuries, and ensure the well-being of communities.<sup>15</sup>

The evidence base of disaster health in the acute setting is very limited, both in India and internationally. And with the increase in disasters and their impact all over the nation, it is important that nurses are prepared for disasters to safeguard themselves and the community during disasters. Therefore, the researcher felt the need to conduct a study on the “Experience on Disaster Preparedness and Responses Among the Staff Nurses Working in Emergency Department of Selected Hospital at Guwahati, Assam” and selected the problem statement for further research study.

## OBJECTIVES

### GENERAL OBJECTIVE

To determine the experience on disaster preparedness and response among the staff nurses working in emergency department.

### SPECIFIC OBJECTIVES

1. To assess the experience on disaster preparedness and responses among staff nurses working in emergency department.
2. To find out the previous and current experiences on disaster preparedness and response among staff nurses working in emergency department (comparative analysis).

## RESEARCH METHODOLOGY

The present study was conducted to assess The Experience on Disaster Preparedness and Responses Among the Staff Nurses Working in Emergency Department of Selected Hospital at Guwahati, Assam.

**Research approach:** Qualitative research approach.

**Research design:** Phenomenological research design.

**Population:** Staff Nurses

**Target Population:** Staff nurses working in emergency department

**Accessible Population:** Staff nurses who are working in emergency department in selected Hospitals at Guwahati, Assam

**Sample:** 12 Staff nurses who are working in emergency department at Hayat Hospital, GNRC Hospital Guwahati, Assam.

**Sampling technique:** Non-probability (Purposive sampling) technique.

**Theoretical framework:** The conceptual framework for the study is based on Modified Roy's Adaptation Model.

**Tools for data collection:** Tool 1- SOCIO-DEMOGRAPHIC PROFORMA, Tool 2- SEMI- STRUCTURED INTERVIEW QUESTIONNAIRES

**Data Analysis:** I. Descriptive Statistics- Frequency, Percentage, II. Thematic Analysis (Braun and Clarke's 6 steps Thematic Analysis)

**Result:** QDA Miner Lite is used to analyze the collected data.

**Table 1: Frequency and percentage distribution of staff nurses working in emergency department with selected demographic variables.**

n=12

Sl.no.	Demographic Variables	Frequency	Percentage
1.	Age a. 21-30 years b. 31-40 years c. 40 years and above	5 5 2	41.7 41.7 16.6
2.	Gender a. Male b. Female c. Transgender	1 11 0	8.3 91.7 0
3.	Marital status a. Single b. Married c. Divorced d. Widowed	7 5 0 0	58.4 41.6 0 0
4.	Religion a. Hindu b. Christian c. Muslim d. Other	3 7 1 1	25 58.4 8.3 8.3
5.	Educational status a. BSc. Nursing b. PBSc. Nursing c. GNM	4 3 5	33.4 25 41.6
6.	Work experience a. 1-5 years b. 6-10 years c. 10 years and above	4 5 3	33.4 41.6 25
7.	Undergone disaster training a. Yes b. No	8 4	66.6 33.4

The data in the table 1 depict that the majority of the staff nurses working in emergency department, i.e., 5 (41.7%), are in both the age groups of 21-30 years and 31-40 years, followed by 2 (16.6%) are in the age group of 40 years and above. Majority of the staff nurses working in emergency department are female, i.e., 11 (91.7%), 1 (8.3%) is male, and none of the staff nurses are transgender. The above data also shows that the majority of the staff nurses working in emergency department are single i.e., 7 (58.4%), followed by 5 (41.6%) who are married, and none of the participants are divorced (0%) or widowed (0%), majority i.e., 7 (58.4%) of the nurses are Christian, 3 (25%) of the nurses are Hindu, 1(8.3%) of the nurses are Muslim, and 1 (8.3%) of the nurses belong to other religions. Furthermore, majority of the staff nurses working in emergency department, i.e., 5 (41.6%), have an educational qualification of GNM, 4 (33.4%) of the staff nurses have an educational qualification of PBSc. Nursing and 3 (25%) of the staff nurses have an educational qualification of BSc. Nursing, majority i.e., 5 (41.6%), have 6-10 years of experience followed by 4 (33.4%) have 1-5 years of experience, and 3 (25%) have experience of 10 years and above and also majority of the emergency staff nurses, i.e., 8 (66.6%), have undergone disaster training, and 4 (33.4%) have not undergone disaster training.

**Table 2: Themes and sub- themes under the study.**

Sl. No.	THEMES	SUB THEMES
1.	Development and regular implementation of disaster training in nursing practice	Need for continuous disaster risk management training
2.	Varying conditions in disaster situation	Psychological impact on the nurses
		The unpredictability of the disaster
3.	Competency building in nursing disaster preparedness practice	Nurses professional practice
		Drills and training
		Educators and trainer’s role in disaster training
4.	Determinants of management competency in disaster situation	Hospital disaster plan
		Importance of leadership
		Team dynamics, co-ordination and collaboration in disaster response
		Communication
5.	Challenges faced in disaster situation	Inadequate capacity building and infrastructural capacity
		Nurses professional experience
		Lack of collaborative management by the nurse manager
6.	Differences in nursing disaster practice then and now	Change in learning attitude and disaster preparedness behaviour of the nurses
		Advancement in the technology

The table 2 depicts the findings of 6 major themes and 15 sub-themes which were identified via thematic analysis. The major theme included Development and regular implementation of disaster training in nursing practice, Varying conditions in disaster situation, Competency building in nursing disaster preparedness practice, Determinants of management competency in disaster situation, Challenges faced in disaster situation, Differences in nursing disaster practice then and now. The sub themes identified were need for continuous disaster risk management training, psychological impact on the nurses, the unpredictability of the disaster, educators and trainers role in disaster training, nurses professional practice, drills and training, inadequate capacity building and infrastructural capacity, nurses professional experience, lack of collaborative management by the nurse manager, team dynamics, co-ordination and collaboration in disaster response, importance of leadership in disaster situation, hospital disaster plan, communication, change in learning attitude and disaster preparedness behaviors of the nurses, advancement in the technology.

**1. DEVELOPMENT AND REGULAR IMPLEMENTATION OF DISASTER TRAINING IN NURSING PRACTICE**

This area of the study deals with the importance of development and regular implementation of disaster training in nursing practice. It has been discovered that practice and training are highly helpful for disaster preparedness and response. Staff nurses benefit from regular, timely training implementation as it helps them refresh and reinforce their skills and knowledge.

**1.1 NEED FOR CONTINUOUS DISASTER RISK MANAGEMENT TRAINING**

Nurses emphasized the requirement of the training and their competency in preparation and response to disaster effectively. They voiced that a structured, continuous and effective training is essential in improving the management skill among nurses in disaster preparation and response. The responses of participants are as follows:

*“I think training is a must because without knowing anything even if I put that many things..... if they don’t know how to manage then what is the point? Right? So training is very important.” (P3)*

**2. VARYING CONDITIONS IN DISASTER SITUATION:**

The theme reflects to the experience of nurses in a variety of tasks and responsibilities that arise during a disaster situation. In every aspect of daily, routine nursing duties and responsibilities, the role and obligation are drastically changed during an emergency situation. The number of patients with growing or expanding needs for nursing care, as well as the resources needed to provide that care, provide challenges for nurses. Longer duty hours, abrupt changes to usual nursing care, and unfamiliar conditions are all

experienced by the nurses. Furthermore, the nurses are expected to respond quickly, which adds uncertainty and confusion to the situation.

### 2.1 THE UNPREDICTABILITY OF THE DISASTER

The second sub-theme deals with the nature of the disaster and predictability of the disaster and its duration. The disaster situation cannot be predicted, It is impossible to forecast the crisis situation; the unknowable nature of the disaster creates uncertainty among the nurses regarding the speed and quality of care. Following are the participants responses:

*"I remember there was fire in the building and many workers were injured, so many of the injured victims came we were rushed by those patients, at that time it was very difficult to manage like we were not mentally ready because for so long we did not have any mass casualty in our department."(P12)*

### 2.2 PSYCHOLOGICAL IMPACT ON THE NURSES

This sub-theme includes the various psychological impact the nurses experiences at the time of disaster situation. In the event of a tragedy, the nurses feel more physically and emotionally vulnerable. They might have PTSD, irritation, anger and decreased activity. Additionally, since they frequently care for patients who have serious injuries and infections, nurses may experience varying degrees of emotional turmoil, difficulty managing multiple patients and making decisions, confusion, and uncertainty. These factors can lead to burnout, physical and mental exhaustion, fear, incompetencies, and self-doubt. The responses of the participants are as follows:

*"so we directly called the disaster team and started with triaging and the care..... it was very hectic you know. so like it is not a very pleasant experience [uhhhh.....] The ward becomes very busy and chaotic you know and it was very chaotic. At first I was confused what to start and I was kind of feeling lost." (P3)*

## 3. COMPETENCY BUILDING IN NURSING DISASTER PREPAREDNESS PRACTICE:

The theme deals with the importance of the nurse's professional practice, role of the nurse educator and mentor, practicing of the drills and training in order to increase competence in disaster risk management i.e. disaster preparedness and response.

### 3.1 NURSES PROFESSIONAL PRACTICE

In order for nurses to truly understand the basic concepts of disaster risk management practice, it is crucial that they comprehend their daily allocated tasks and responsibilities as well as their own professional practice. Furthermore, that involves self-preparation and inventory checks. Because a clear concept helps nurses prepare for unanticipated emergencies and distinguish between the specific action and routine work required for disaster risk management. The following are the responses given by the participants:

*"Preparing for the disaster.... Like getting ready for the disaster like we practice the triaging based on the priority, we also keep daily checking if the equipment, procedure trolley, inventories yeah, all those things and we have disaster kit that we maintain and always keep ready for use ... we have daily checking of crash trolley with all the important items." (P2)*

### 3.2 EDUCATOR AND TRAINER ROLE IN DISASTER TRAINING

The role of trainer and educator is critically vital in disaster response and planning. Training is the most important component of nursing, and when it comes to disaster risk management, nurses need to be proactive and ready for emergencies. It is the responsibility of the educator and trainer to create a well-structured disaster risk management training and activity with the highest level of staff engagement in order to increase staff awareness and preparedness for the disaster. In order to improve hospitals' readiness to manage the disaster, ongoing training that is both operational and practical is far more beneficial than merely theoretical training. The responses provided by the participants are as follows:

*"[Uh.... ] we have received training like I mentioned already right..... [umm.....] those were classroom teaching only, those training and classes are taken by our mentor in charge and nurse educator" (P1) (P2)*

### 3.3 DRILLS AND TRAINING

Training that is entirely theoretical is not as helpful as holding practical exercises to increase staff preparedness for disasters. The analysis of the participants' disaster experiences revealed that frequent exercises such as mock drill training, triaging, job card, role assignments in disaster situation and practicing of essential life support training to improve coordination were beneficial. The responses are as follows:

*"I was assigned as a triage nurse in that mock drill and I was assigned for triaging the patient based on priority [.....] so all the triaging points I had to follow, the directions were given by the team leader in the mock drill and those we had to follow. We got training but situation can come up anytime you know, so the role assignments and recalling the mock drill helps."(P2)(P4)*

## 4. DETERMINANTS OF MANAGEMENT COMPETENCY IN DISASTER PREPAREDNESS AND RESPONSE:

This theme deals with the competency of the staff nurses and the management in disaster preparedness and response. Disaster preparedness and response require diverse set of skills by the nurses as well as by the hospital management team. The preparation and response differ as per the type of disaster. Additionally, the co- ordination and interdepartmental team work, leadership support management plan as well as the hospital management communication skills determines the successful disaster risk management.

### 4.1 HOSPITAL DISASTER PLAN

Given the complexity and unpredictability of the disaster, it is critical that a systematic strategy be created, carried out, and regularly reviewed. The participants have also emphasized how efficiently and successfully the disaster team and prepared materials and assistance, such as the disaster kit, have aided them. Everyone and everything are impacted when a disaster strikes, so it is crucial

that hospital administration and nurses are familiar with the emergency response codes and warning system. The participants responded as follows:

*“we have disaster plan in our hospital we follow that in cases of any internal or external disaster. It is very helpful at times of emergency situation.” (P7),(P9)*

#### 4.2 IMPORTANCE OF LEADERSHIP IN DISASTER SITUATION

In a disaster the complexity of the situation changes and it becomes more challenging. The nurse manager must fulfil the responsibility to ensure that the training and evaluation of the disaster management practice are done among the staff nurses so as they are ready for the disaster situation. The participants have recognized the importance of a team leader in a disaster situation. They highlighted that having a team leader helps them in streamlining their work efficiently. The following are the participants responses:

*“I think for me if someone expert leads the team like last time our department HOD came down to mediate the situation; it really helps with the work and reduces confusion and uncertainty.” (P11)*

#### 4.3 TEAM DYNAMICS, CO-ORDINATION AND COLLABORATION IN DISASTER RESPONSE

The staff nurses recognized the importance of team work, dynamics and collaboration within their practice, in preparation for disaster and in responding to a disaster situation. The nurses strongly believed that working and coordinating together in a disaster situation allows them to interact clearly and clear any doubt with the fellow staffs and the managers which help in working efficiently. However, during a disaster situation it becomes more challenging for the nurses to work effectively as a team because of changing and emergency nature of the disaster. The responses are as follows:

*“it was very hectic you know..... everyone one was there helping us with the patient.... Our supervisor, management team, housekeeping [.....] so yeah. I informed our management team our supervisors that there is difficulty in shifting the patient because of the bed [.....] then they arranged and it was managed” (P2)*

#### 4.4 COMMUNICATION

During disaster situation the working condition becomes more challenging for the nurses, communication and interaction among the fellow team members and with the patients becomes very crucial to work efficiently. Participant showed concern about not being able to communicate with the management team due to unpredictable nature of the disaster. The state of mind of the nurses in a disaster situation becomes emotionally unstable led by confusion, misplaced expectation, lack of information which may result ineffective communication with the companions and the patients. The responses are as follows:

*“So when the actual situation happens, I think communication among us needs to be improved because we have to vocalize about what we have done you know because when disaster happens the situation becomes very challenging.”(P2)*

### 5. CHALLENGES FACED IN DISASTER SITUATION

This theme of the study includes all the deficiencies, barriers and challenges faced by the nurses during disaster situation. the challenges faced depends upon the nature of the disaster as well as the competency of the staff and the level of team work among the responding staff and the resources available.

#### 5.1 INADEQUATE CAPACITY BUILDING AND INFRASTRUCTURAL CAPACITY

During the disaster situation the participants has pointed out shortage of workforce and this shortage is severe in times of crisis. Workforce management is very crucial in disaster management and response as a disaster situation require as much manpower as possible. Therefore, to reduce the damages during crisis or disaster situation preparation and recruitment of new team members as well as use of volunteer staff is very important. Additionally, comprehensive program for admission and hospitalization of patients increases at times, the participants faced barrier in creating alternative spaces for the patients. The responses are as follows:

*“also I think more than one team can be prepared because see we need as much manpower and staff as possible and you see.... The disaster can happen anytime so if multiple teams are there then we manage the situation at any point of time.....i think.”(P3)*

#### 5.2 NURSES PROFESSIONAL EXPERIENCE

To tackle critical situation such as of a disaster, even the years of experience preparation and practice is not enough to match with complexity and changing nature of the disaster situation. The exposure to disaster situation is very much important in nursing experience to actually understand the degree of preparation and the skills required for disaster response by the nurses and the team.

*“uumm sometimes like new joining staff they are difficult to train like in case of emergency situation, we have to act quickly you know so sometimes it becomes difficult to work with the newly joined staff nurse in those situations.” (P3)*

#### 5.3 LACK OF COLLABORATIVE MANAGEMENT BY THE NURSE MANAGER

When it comes to staff management, personnel allocation, and work delegation, the nurse manager is a key leader in disaster preparedness and response. Low nurse motivation and poor disaster management practices might be caused by inadequate staffing and staff work. Participants expressed concern about the unit's lack of manpower and insufficient staffing during a disaster. The responses are as follows:

*"I think that night only 4 staff was there that also 2 junior staff so we had difficulty in managing the patient [.....] because it was so unexpected you know, and at night already the management teams are not there so we had to work and accommodate accordingly. We had a sudden rush of patients and it was very difficult but somehow, we managed." (P1)*

## 6. DIFFERENCES IN NURSING DISASTER PRACTICE THEN AND NOW

This theme covers the changes and differences in the nursing practice in relation to disaster preparedness and response.

### 6.1 CHANGE IN LEARNING ATTITUDE AND DISASTER PREPAREDNESS AND RESPONSE BEHAVIOUR OF THE NURSSES

The learning attitude and change in nurses' behavior towards disaster preparedness and response is reflected on the active participation, cooperation, and coordination. The today's nurses are motivated to learn and act. This enthusiasm is key towards the successful disaster risk management, preparation and response. The following are the responses by the participants:

*"Since because so much war is going on the fact that I had a chance to attend and be a part of the disaster drill was very helpful for me, I was actually very enthusiastic about it." (P6)*

### 6.2 ADVANCEMENT IN TECHNOLOGICAL RESOURCES

With the advancement of technology, it is important that the medical technological system also advances. The nurses have pointed out the change in the technological resources through the years of disaster management practice. The upgradation of the technological resources such as improvement in information system, availability of equipped ambulance facilities and other medical appliances which has seen to be the major change that aided in the positive disaster preparation and response. The interview responses are as follows:

*"new new changes are there ..... See, the changes are that we didn't have ACLS and BLS equipped ambulances and also the staff were not trained on those ACLS and BLS and people have become very smart and very active as compare to before I think yeah they know what to prepare, what to do, what not to do, And also so many things have changed like in terms of technology also yeah." (P3)*

## DISCUSSION

- Based on the participants responses, subtheme has emerged, Need for continuous disaster risk management training. The importance of the training and its impact on the nurse's ability to prepare for and respond to disasters effectively. In order to improve nurses' management skills in disaster preparedness and response, they must receive organized, ongoing, and efficient training. Jieun Lee, Eunjoo Lee (2020) suggested that there is significant improvements in preparation ( $t=-7.67$ ,  $p<.001$ ), attitudes ( $t=-2.31$ ,  $p=.024$ ), and disaster nursing abilities ( $t=-16.82$ ,  $p<.001$ ) after training. There were statistically significant relationships between nurses' attitudes, readiness, and disaster nursing competence. It is concluded that disaster training enhanced these elements, recommending more hands-on disaster training programs for nurses and nursing students to further improve competency.<sup>16</sup>
- Nurses' experiences in crisis situations vary significantly. Participants noted that their roles and responsibilities shift dramatically during emergencies, with increased patient numbers leading to heightened care demands and resource pressures. This creates an environment of uncertainty and confusion. Nurses must adapt to new challenges, longer shifts, and abrupt changes in routine care. The level of unpredictability in a disaster greatly affects their responses. Many reported feelings of physical and psychological vulnerability, experiencing PTSD, irritation, and emotional distress, which complicates decision-making and patient management. These findings were supported by the study conducted by Lijun Kanga, Simeng Maa, Min Chen, et.al. (2020) on impact on mental health and perception of psychological care among medical and nursing staff in Wuhan during the 2019 corona virus disease outbreak showed that among 994 medical and nursing staff working in Wuhan, 36.9% had subthreshold mental health disturbances (mean PHQ-9: 2.4), 34.4% had mild disturbances (mean PHQ-9: 5.4), 22.4% had moderate disturbances (mean PHQ-9: 9.0), and 6.2% had severe disturbance (mean PHQ-9: 15.1) in the immediate wake of the viral epidemic. These findings of the study also emphasized the importance of being prepared to support frontline workers through mental health interventions at times of widespread crisis.<sup>17</sup>
- The study's interviews revealed key areas to enhance staff nurses' proficiency in disaster risk management. Participants noted that their crisis management skills depend on their awareness of professional practice. Active disaster training and evaluation from nurse educators also help identify improvement areas. Additionally, drills and training exercises are essential for enhancing disaster preparedness and response. The findings of the present study were supported by a study conducted by Dandan Zhang, Yong Jun Chen, Tianxin Cui et.al (2024) found that nurses had a mean competency score of 141.75 (SD 20.09). While 19.32% of nurses reported experience in infectious disease situations, many lacked sufficient training (24.43%) and drills (29.93%). Notably, 91.19% expressed a willingness to undergo additional training. The study concluded that regular training and simulations are essential for improving response competency, as real-world experience in higher education appears limited. Customized training approaches are crucial for enhancing nurses' skills and ensuring effective disaster response.<sup>18</sup> Effective disaster preparedness and response rely heavily on the managerial skills of hospital management and staff nurses. Participants noted that a clear hospital disaster plan helps streamline tasks during emergencies. The team leader's guidance is essential for nurses to navigate complex situations. Additionally, interdepartmental coordination and collaboration are vital, as crisis scenarios demand considerable manpower. Communication between patients and staff becomes critical in emergencies, as highlighted by the participants. A.M. Guerrero, Ö. Bodin, D. Nohrstedt, R. Plummer, J. Baird, R. Summers (2023) found that individual performance is more influenced by agreement among collaborators than by coordination, with coordination skills becoming vital only when consensus exists. The study suggests that enhancing consensus after disasters may mitigate their adverse effects on ecosystems and communities.<sup>19</sup> Ab. Samah, Norazam (2018) suggested that Hospitals in disaster-prone areas need to

enhance their resilience. Hospital designs should be robust and adaptable to respond effectively during crises. Observational exercises serve as a valuable tool for understanding disaster management and assessing hospital resilience.<sup>20</sup>

- The participants stated that hiring additional team members or a disaster team could be beneficial because staff nurses frequently struggle with a lack of manpower during emergencies. They also mentioned that patient admissions and hospitalizations occasionally rise, and that setting up alternate locations would enable staff nurses to manage patients more effectively. Respondents also mentioned that not being exposed to a crisis or disaster situation makes staff members confused and hesitant and hinders their ability to handle such events. In addition, the participants said that nurse managers must properly manage staffing and staff allocation in catastrophe situations because a larger workforce is necessary to manage large numbers of patients or victims. Alanazi, M. A., & Shaban, M. (2025) interview with the 14 emergency nurses from general hospital Northern Saudi Arabia revealed patient dislocation, communication hurdles, and resource constraints to be the major theme and the key issues included communication network outages, drug shortages, and challenges in maintaining continuity of care for moved patients. The study concluded that techniques such as improvisation, enhanced communication protocols, and resilience-building exercises are needed to address these challenges.<sup>21</sup> Karin Hugelius, Julia Becker and Annsophie Adolfsson (2020) identified five common challenges were identified: recognizing the situation and managing uncertainty, aligning contingency plans with reality, establishing a functional crisis organization, adapting medical responses, and ensuring resilience after analysing the 20 case reports from natural disaster, manmade events, and accidents across Europe, the USA, Asia and the Middle east.<sup>22</sup>
- According to the participants, staff nurses' learning attitudes and behaviours toward disaster preparation and response have evolved. In terms of involvement, collaboration, and coordination, the nurses are now more proactive. The nurses of today are driven to act and learn. The participants also mentioned that there has been a significant difference in the technology resources over the years of disaster management practice. One of the biggest changes that has helped in disaster preparedness and response has been the improvement of technology resources, such as information systems, ambulance facilities, and other medical equipment.

## CONCLUSION

The present study was conducted to assess the experiences on disaster preparedness and response among staff nurses working in emergency department in selected hospitals at Guwahati, Assam. The study findings resulted in 6 major themes, development and regular implementation of disaster training in nursing practice, varying conditions in disaster situation, competency building in nursing disaster preparedness practice, challenges faced in disaster situation, determinants of management competency in disaster situation, differences in nursing disaster practice then and now. Further, 15 sub- themes were identified i.e. need for continuous disaster risk management training, psychological impact on the nurses, the unpredictability of the disaster, educators and trainers role in disaster training, nurses professional practice, drills and training, inadequate capacity building and infrastructural capacity, nurses professional experience, lack of collaborative management by the nurse manager, team dynamics, co-ordination and collaboration in disaster response, importance of leadership in disaster situation, hospital disaster plan, communication, change in learning attitude and disaster preparedness behaviors of the nurses, advancement in the technology. The study findings concluded that determining the experiences of the emergency staff nurses on disaster preparedness and response is essential for promoting disaster preparedness and improving efforts on disaster response, ensuring of appropriate critical care and safety for the patients. The findings can be used by the nursing leaders, government, healthcare policy makers which can help and support nursing workforce.

## ACKNOWLEDGMENT

Firstly, I thank Donyi Polo, for this life, endless grace, wisdom, and strength that have sustained me throughout this research journey. Without your guidance and blessings, this work would not have been possible. I would like to express my sincere gratitude to my guide, Mrs. Anurupa Dutta for their invaluable guidance, encouragement, and unwavering support throughout the course of this research. A heartfelt thanks goes to our esteemed Principal Prof. Mrs. Amutha V.K, Army Institute of Nursing, Guwahati for their constant encouragement, moral support, and for fostering an academic environment that enabled the successful completion of this work. My sincere gratitude is extended to our valued Vice Principal, Professor Mrs. Kabita Baishya, Army Institute of Nursing for the unwavering moral support, encouragement. which have been invaluable to the development of this thesis. I am deeply thankful to the medical superintendent, Nursing superintendent, HR department and management of Hayat Hospital, Guwahati and GNRC Hospital, Guwahati for their cooperation in the conduction of the study. I am profoundly thankful to my parents Shri Gyati Rana, Smt. Gyati Yake, my siblings Gyati Ambing Pussang, Dr. Gyati. H. Rinyo, Gyati Sunya, Gyati Mamung, Gyati Sumpi for their unconditional love, patience, and belief in me. I want to express my profound appreciation to my adorable, cutest and beloved nephews, Master Hage Arrang and Master Hage Adang, for being the source of my happiness and for their unwavering affection. Special thanks go to my classmates Heri Akum, Maitreyee Konwar, Arpita Kalita, Somi Mori, Mon Mayuri Choudhury, Arpana Kalita, Rajoshree Saikia who have provided stimulating discussions, helpful suggestions, and continuous motivation throughout this journey. I want to express my sincere gratitude to my GLIONKS for their unwavering and unseen support which gave me strength.

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