

ASSESSMENT OF EMERGENCY AND CLIMATE CHANGE RELATED DISASTER HANDLING PREPAREDNESS AND ASSOCIATED FACTORS AMONG THE HEALTHCARE WORKERS OF EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITALS PESHAWAR

Bilqees Muhammad¹, Zeeshan Ahmad², Kamran Akbar³, Muhammad Younas⁴, Saba Ali⁵, Muhammad Sulaiman^{6*}

¹BS Surgical Technology, Khyber Medical University

²BS Surgical Technology, Khyber Medical University

³Lecturer, Khyber Medical University

⁴Emergency Care Technologist

⁵Final year MBBS, Kabir Medical College, Peshawar

⁶Lecturer, Surgical Department, Khyber Medical University

*msulaiman.ipms@kmu.edu.pk

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Corresponding Author:

Muhammad Sulaiman

Abstract

Healthcare professionals require sufficient knowledge and preparedness to manage climate change-related disasters effectively. This study evaluated the knowledge, attitudes, and familiarity with disaster preparedness among healthcare workers in tertiary care hospitals in Peshawar. A descriptive cross-sectional study was conducted using a self-administered questionnaire and convenience sampling from July to December 2024. A total of 171 healthcare professionals participated. Of these, 59.6% were male, and 40.4% were female. Among respondents, 35.67% lacked basic knowledge of disaster preparedness, while 64.32% demonstrated good knowledge. Most respondents (67.83%) had a positive attitude, and 32.17% had a negative attitude. Only 30.40% were highly familiar with disaster preparedness and response. Targeted education programs are needed to equip staff with essential knowledge. Establishing clear protocols and including disaster management methods in emergency department checklists can help reduce mortality and morbidity. Organizing workshops for emergency department staff and conducting follow-up research will further enhance preparedness and improve the quality of nursing education, healthcare, and community settings.

Introduction

The World Health Organization defines a disaster as 'a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses that

surpass the ability of the affected community or society to deal with using its resources (1). Every day, disasters strike somewhere in the world, with profound effects on people, families, and communities (2).

Disasters destroy infrastructure and communities worldwide, resulting in significant losses of both material and human resources. In a similar way, disasters also impact hospitals and health facilities, limiting their ability to assist people affected by them (3). Due to human or natural factors, the size and severity of catastrophes have been rapidly increasing over the last 10 years (4).

There are two broad categories of disasters: natural and artificial (5).

According to the National Disaster Management Authority's study, floods, storms, cyclones, landslides, and other extreme weather events are the primary causes of natural hazards in Pakistan. One of the main dynamic factors that make Pakistani society more susceptible to calamities is climate change and its unpredictability (6).

A nation or area's ability to adapt is a major determinant of exposure to the health effects of natural disasters. For example, about three-quarters of the world's death toll from natural catastrophes occurs in low-income nations (7).

Flooding is the most destructive natural catastrophe in Pakistan, resulting in a significant loss of infrastructure, natural resources, and human life (8). Over the past two decades, flooding has been the most frequent natural disaster, affecting 2.3 billion people globally and accounting for 47% of all reported natural disasters. At various interconnected levels, the combined effects of human-caused and natural disasters pose growing hazards to humanity (9).

According to the United Nations Development Program, Natural disasters killed 1,429,412 people worldwide between 1980 and 1999. Of those deaths, almost 96.4% (1,377,318) took place in poor nations, with 38% (520,165) taking place in the nations that make up the World Health Organization's African region (10). According to

epidemiological trends of disasters worldwide, floods, cyclones, and earthquakes occur more often in Asia (11).

One of the rare nations in the world that experiences widespread natural and human-caused disasters is Pakistan. Pakistan has experienced an unparalleled amount of natural and human-caused calamities during the past 20 years. Pakistan has incurred direct and indirect costs from the disasters, totalling around US\$126.79 billion over this period (12). Almost three million people were affected, and approximately one million were displaced in KPK, one of the most severely affected provinces. KP has seen multiple devastating floods, notably those in 2007, 2010, and 2012 (13). Khyber Pakhtunkhwa has seen some of the worst floods in its history in 2022 (14). Recent monsoon floods in June and August 2025 have exacerbated the humanitarian crisis, with KP facing unprecedented losses. Flash floods triggered by intense cloudbursts in mid-August caused over 320 deaths in the province alone, with Buner district reporting more than 200 fatalities. Amid nationwide devastation, Punjab experienced its worst recorded flooding, affecting an estimated two million people, prompting massive evacuations and widespread agricultural loss. Although our data were collected in 2024, the persistence of extreme flooding events in 2025 highlights the ongoing vulnerability of Pakistan's provinces. For instance, recent floods have caused widespread displacement and loss of life, underscoring the continued urgency of strengthening disaster preparedness strategies. By providing their communities with vital medical care during a disaster, hospitals play a

crucial role in the healthcare system. Natural or human-caused disasters that damage infrastructure or patient flow frequently call for a multifunctional, multisectoral reaction and recovery effort that must include healthcare delivery (15).

Since Florence Nightingale cared for the sick and injured during the Crimean War, nurses have been crucial to disaster relief. Through their technical abilities and understanding of epidemiology, physiology, pharmacology, psychology, and the cultural background of survivors and their families in various catastrophic situations, nurses now support disaster responses (International Council of Nurses, 2009, 16).

By learning from the past, evidence-based methods for improved medical systems and personnel preparedness, response, and recovery in future difficult and unpredictable disasters can be developed. A foundation for efficient crisis management and for the creation of plans and strategies to improve readiness is provided by investigating the experiences of nurses who have participated in relief activities (17).

Pakistan's healthcare system faces significant challenges, like many other developing nations. Both pre-hospital and hospital-based emergency medical services have long been neglected (18). Numerous studies on health professionals' crisis management training and readiness have been conducted worldwide. However, no investigation has been conducted to assess health professionals' emergency and disaster management training and expertise in Pakistan (19). The study's main goal is to assess and evaluate health professionals' knowledge, attitudes, and training in emergency and disaster management in Pakistan. This will also aid the government in implementing medical professionals' education and training programs for emergency and disaster management and readiness (20).

Literature Review

Investigating emergency nurses' readiness for disasters has received increasing focus in recent years. As of right now, the majority of international research on emergency nurses' readiness for disasters has found that emergency nurses are still not properly prepared in all areas of disaster nursing competencies and has clearly indicated a weak-to-average or low-to-moderate degree of preparedness (21).

Emergency department (ED) nurses, emergency doctors, out-of-hospital Emergency Medical Service (EMS) workers, medical residents, nursing students, and medical and EMS students are among the categories of acute care medical professionals who have conducted these studies in various locations (22).

2016 research conducted in Malaysia assessed the knowledge, attitudes, and practices of nursing and medical personnel working in emergency rooms. It found that respondents had a positive outlook and sufficient understanding of medical emergencies (1). According to a 2020 Iranian study, nurses' attitudes and knowledge of disaster management were associated with the highest and lowest mean scores, respectively. All three dimensions were, nonetheless, at a reasonable level. Significant correlations were also found between the mean performance score and age, marital status, gender, and job experience, as well as between the mean knowledge score and age and work experience (23).

Nonetheless, there are several noteworthy deficiencies in emergency providers' training. For instance, according to research by the Institute of Medicine, only 49% of hospitals

provided disaster preparedness training to their interns and residents, a nationwide issue in the emergency management community (24). Studies assessing Pakistan's preparedness for crisis management are scarce, despite the country's high vulnerability to natural disasters (25).

Methodology

A descriptive cross-sectional study was conducted to assess the knowledge, attitudes, and familiarity with disasters of healthcare workers regarding preparedness for disaster and emergency management. These data were collected from July 2024 to December 2024. The study was conducted at Lady Reading Hospital (LRH) and Hayatabad Medical Complex (HMC), Peshawar. Slovin's formula was used to select the sample size with a 95% confidence level, 5% margin of error, and a population size of 300. The resultant sample size of 171 was calculated to be representative of the healthcare workers' population at the tertiary care hospital in Peshawar.

$$N = n / (1 + ne^2)$$

Where $n=300$, $e=0.05$

$$\text{So, } n = 300 / (1 + 300(0.05^2))$$

$$N = 171$$

N: The number of samples

N: The total population

E: The allowed probability of error in the sample

The sample was obtained using a non-probability convenience sampling technique. This approach involved selecting participants who were readily available and meeting the research's inclusion criteria during the study. All personnel working in the emergency department, including doctors, anesthesia personnel, all nursing staff, emergency technologist/technician and administrative staff who dealt with disaster management. These participants included healthcare workers working in various public sector (tertiary care) hospitals in Peshawar. All

registered healthcare workers, with their respective councils and medical faculties, who were involved in disaster management, regardless of their experience, age, gender, or socio-economic status, were included in the study. Unregistered HCWs, those returning incomplete questionnaires, and personnel working in the emergency department as cleaning staff or students were excluded from the data analysis phase. A cross-sectional study was conducted in LRH and HMC Peshawar. The study took place between July 2024 and December 2024. Informed consent was obtained from the participants and explained to them in their native language in accordance with the ethical principles of the Helsinki declaration (World Medical Association 2013). The questionnaire data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 22.0. Descriptive statistics were applied. Quantitative variables such as gender and years of work experience. The data were presented as means, medians, and standard deviations, while qualitative variables were presented as percentages, frequency distributions, pie charts, and cross-tabulations. The chi-square test was used to examine the relationship between emergency department staff sociodemographic factors and to identify associations with disaster management and related factors. The level of significance was considered as $p \leq 0.05$.

Results

4.1 Description of Socio-Demographic Characteristics of Respondents

In the study, 171 participants were included: 102 (59.6%) males and 69 (40.4%) females.

75 (43.9%) of participants were married, and 96 (56.1%) were single. Many respondents, 74 (43.3%), 68 (39.8%), 17 (9.9%) and 12 (7.0%), < 3 years, 3–6 years, 6–9 years and > 9 years of clinical experience, respectively. Among study participants, most (98; 57.3%) had achieved a BS/BSN/MBBS in comprehensive emergency education. The rest, 43 (25.1%), 25 (14.6%), and 5 (2.9%), had a diploma

in emergency and critical care nursing, a fellowship, and a master's in emergency medicine and critical care nursing, respectively.

Figure 1: Gender of participants

This Pie chart shows the gender distribution of participants: out of 171, 102 (59.65%) were male, while 69 (40.35%) were female.

Table 1: *Socio-demographic characteristics of respondents*

Variable	Subcategories	Frequency	Percentage
Gender	Male	102	59.6%
Gender	Female	69	40.4%
Marital Status	Single	96	56.1%
Marital Status	Married	75	43.9%
Marital Status	Divorced	0	0%
Clinical Experiences	Less than 3 Years	74	43.3%
Clinical Experiences	3-6 Years	68	39.8%
Clinical Experiences	6-9 years	17	9.9%
Clinical Experiences	Greater than nine	12	7.0%
Highest Level of Education Attained	Diploma	43	25.1%
Highest Level of Education Attained	BS/BSN/MBBS	98	57.3%
Highest Level of Education Attained	Master	5	2.9%
Highest Level of Education Attained	Fellowship	25	14.6%

Figure 2: *Level of education of Respondents*

In the histogram and frequency polygon for the highest level of education attained by respondents on disaster and emergency handling preparedness at emergency departments in tertiary care hospitals in Peshawar (Figure 1.00), 1.00 represents a diploma, 2.00 represents BS/BSN/MBBS, 3.00 represents a master's degree, and 4.00 represents a fellowship.

4.2 Knowledge of the Respondent on Disaster Handling Preparedness

This study revealed that, among respondents regarding disaster and emergency preparedness at the ED, most, 150

(87.7%), have disaster awareness, while the rest, 21 (12.3%), do not have awareness regarding disasters in the past five years. Most (86, 50.3%) and 59 (34.5%) are good and excellent, respectively, and 21 (12.3%) and 5 (2.9%) are fair and poor, respectively, in current knowledge regarding the management situation. The majority of respondents, 146 (85.4%), understood that hospitals play a key role in disaster management; the rest, 25 (14.6%), were unaware of the role of hospitals at that time. Twenty-three (13.5%) participants do not know whether their hospital has a disaster plan; 13 (7.6%) responded that their hospital

does not have one. The rest, 135 (78.9%), responded that their hospital has a disaster plan; 44 (25.7%) participants do not know the major components that must be included in a disaster plan, and 127 (74.3%) do. Only 118 (69.0%) have

received emergency preparedness training, and 53 (31.0%) have not. 92 (53.8%) have not undergone simulation training on emergency preparedness.

Table 2: *Knowledge of Accidents and Disaster Handling Preparedness*

Variables		Frequency	Percentage
Have your awareness of Disaster within the past five years?	Yes	150	87.7%
Have your awareness of Disaster within the past five years?	No	21	12.3%
Rate your current knowledge regarding the management situation?	Excellent	59	34.5%
Rate your current knowledge regarding the management situation?	Good	86	50.3%
Rate your current knowledge regarding the management situation?	Fair	21	12.3%
Rate your current knowledge regarding the management situation?	Poor	5	2.9%
Are you aware of the role of hospitals during disasters/emergencies?	Yes	146	85.4%
Are you aware of the role of hospitals during disasters/emergencies?	No	25	14.6%
Does your hospital have a disaster plan?	Yes	135	78.9%
Does your hospital have a disaster plan?	No	13	7.6%
Does your hospital have a disaster plan?	Do not know	23	13.55%
Do you know the major components/issues that must be included in a disaster plan?	Yes	127	74.35%
Do you know the major components/issues that must be included in a disaster plan?	No	44	25.75%
Have you received information or training regarding emergency preparedness?	Yes	118	69.0%
Have you received information or training regarding emergency preparedness?	No	53	31.0%
Have you received information or training regarding emergency preparedness?	Do not remember	0	0%
Have you had simulation training in relation to emergency preparedness in the past 2 years?	Yes	92	53.8%
Have you had simulation training in relation to emergency preparedness in the past 2 years?	No	79	46.2%
Have you prepared to handle emergency situations in your emergency department?	Yes	143	83.6%
Have you prepared to handle emergency situations in your emergency department?	No	28	16.4%
Mean $\pm$ SD of 0.92 $\pm$ 0.18	Mean $\pm$ SD of 0.92 $\pm$ 0.18	Mean $\pm$ SD of 0.92 $\pm$ 0.18	Mean $\pm$ SD of 0.92 $\pm$ 0.18

Figure: Three

Knowledge regarding the preparedness of respondents

The above graph shows a survey conducted in the emergency department to assess knowledge among 171 participants. They were asked about the current knowledge regarding the management situation. Out of 171 participants, 86 (50.29%)

correctly mark that they have good current knowledge regarding the management situation, 59 (34.50%) mark the knowledge as excellent, 21 (12.28%) mark fair knowledge, and 5(2.92%) mark poor current knowledge regarding the management situation.

Table: Three

The Overall Knowledge Level

	Frequency	Percentage
Good Knowledge	110	64.32%
Poor Knowledge	61	35.67%

4.3: Attitude of respondents on disaster handling preparedness:

The mean attitude of accident and disaster handling preparedness is 1.31 ± 0.19. In addition, the good attitude of participants regarding disaster handling preparedness was 79.58%; the poor attitude was 15.9%; and 4.9% of participants did not show any attitude regarding disaster handling preparedness. All respondents (46, 26.9%) agreed that they do not need knowledge of emergency operational plans, while 120 (70.2%) disagreed and 5 (2.9%) were unsure. Regarding management to be adequately prepared during disaster occurrence most 135 (78.9%) agreed, 31 (18.1%) disagreed and 5 (2.9) were unsure about that; 56 (32.7%) of respondents believe that disaster management and planning is for a few people in the hospital, but most 106 (62.0%) disagreed and 9 (5.3) were unsure about that. The majority, 157 (80.4%), of respondents agreed that disaster planning is necessary for everyone in the healthcare setting, while only 11 (6.4%) disagreed. Most (148, 86.5%) believe that potential hazards likely to cause disaster must be

identified and dealt with, but 12 (7.0%) did not agree with this, and 11 (6.4%) were unsure. The majority, 160 (93.6%), of respondents agreed that training is necessary for emergency health-care workers in disaster preparedness, while only 9 (5.3%) disagreed. 155 (90.6%) participants believed that emergency (disaster) operational plans need to be updated regularly but 11 (6.4%) disagreed; 28 (16.6%) do not agreed that disasters are likely to happen in our care setting but most, 129 (75.4%), believe that a disaster may occur in their hospital setting and 14 (8.2%) were unsure about that. 53 (31.0%) of respondents believe that disaster management is limited to ED staff; 104 (60.8%) disagreed, and 14 (8.2%). 133 (77.8%) of respondents agreed that disaster simulation/drills should be conducted frequently in the hospital, and 22 (12.9%) disagreed that simulation should be done frequently in a hospital setting (as shown in Table 4).

Table: Four

Attitude Of Participants On Disaster Handling Preparedness

Variable		Frequency	Percentage
I do not need knowledge about emergency (disaster) operational plans	Agree	46	26.9%
I do not need knowledge about emergency (disaster) operational plans	Disagree	120	70.2%
I do not need knowledge about emergency (disaster)	Unsure	5	2.9%

operational plans			
Do you think you need additional training in disaster preparedness and response?	Yes	150	87.7%
Do you think you need additional training in disaster preparedness and response?	No	21	12.3%
Management should be adequately prepared during disaster occurrence	Agree	135	78.9%
Management should be adequately prepared during disaster occurrence	Disagree	31	18.1%
Management should be adequately prepared during disaster occurrence	Unsure	5	2.9%
Disaster management and planning is for few people in the hospital	Agree	56	32.7%
Disaster management and planning is for few people in the hospital	Disagree	106	62.0%
Disaster management and planning is for few people in the hospital	Unsure	9	5.3%
Disaster planning is necessary for all people in the health-care setting	Agree	157	91.8%
Disaster planning is necessary for all people in the health-care setting	Disagree	11	6.4%
Disaster planning is necessary for all people in the health-care setting	Unsure	3	1.8%
Potential hazards likely to cause disaster must be identified and dealt with	Agree	148	86.5%
Potential hazards likely to cause disaster must be identified and dealt with	Disagree	12	7.0%
Potential hazards likely to cause disaster must be identified and dealt with	Unsure	11	6.4%
Training is necessary for emergency health-care workers with regards to disasters	Agree	160	93.6%
Training is necessary for emergency health-care workers with regards to disasters	Disagree	9	5.3%
Training is necessary for emergency health-care workers with regards to disasters	Unsure	2	1.2%
Emergency (disaster) operational plans need to be updated regularly.	Agree	155	90.6%
Emergency (disaster) operational plans need to be updated regularly.	Disagree	11	6.4%

Emergency (disaster) operational plans need to be updated regularly.	Unsure	5	2.9%
Disasters are likely to happen in our care setting.	Agree	129	75.4%
Disasters are likely to happen in our care setting.	Disagree	28	16.4%
Disasters are likely to happen in our care setting.	Unsure	14	8.2%
Disaster management is limited to Emergency department staff	Agree	53	31.0%
Disaster management is limited to Emergency department staff	Disagree	104	60.8%
Disaster management is limited to Emergency department staff	Unsure	14	8.2%
Disaster simulation/drills should be conducted frequently in the hospital	Agree	133	77.8%
Disaster simulation/drills should be conducted frequently in the hospital	Disagree	22	12.9%
Disaster simulation/drills should be conducted frequently in the hospital	Unsure	16	9.4%
Mean $\pm$ SD of 1.31 $\pm$ 0.19	Mean $\pm$ SD of 1.31 $\pm$ 0.19	Mean $\pm$ SD of 1.31 $\pm$ 0.19	Mean $\pm$ SD of 1.31 $\pm$ 0.19

Table: Five

Overall Attitude Level

	Frequency	Percentage
Positive Attitude	116	67.83%
Negative Attitude	55	32.16%

4.4: Disaster Familiarity of Respondent on Disaster Handling Preparedness

The results reveal that the majority of responses sum were ranged from very familiar, somewhat familiar and neutral respectively as follows; 69 (40.4%) are very familiar, 61 (35.7%) are somewhat familiar, 32 (18.7%) are neutral, 4(2.3%) are somewhat not familiar, 5 (2.9%) are not familiar with regard to emergency preparedness terms and activities. Regarding ICS, 55 (32.2%) are very familiar, 52 (30.4%) are familiar, 33 (19.3%) are neutral, 14 (8.2%) are slightly not familiar, and 17 (9.9%) are not familiar. Of the participants, 53 (31.0%) were very familiar, 70 (40.9%) were familiar, 30 (17.5%), 11(6.4%) were slightly not familiar, and 7(4.1%) were not familiar with disaster communication. Only 57 (33.3%) were very familiar with accessing critical resources in

a disaster, 63 (38.8%) were familiar, 35 (20.5%) were neutral, 10 (5.8%) were slightly not familiar, and 6 (3.5%) were not familiar with accessing critical resources. With isolation and quarantine, 70(40.9%) were very familiar, 54 (31.6%) were somewhat familiar, 34(19.9%) were neutral, 10 (5.8%) were somewhat not familiar and 3 (1.8%) were not familiar with the issue; 59 (34.5%) were very familiar, while 62 (36.3%) were somewhat familiar, 31(18.1%) were neutral, 17 (9.9%) were somewhat not familiar and 2 (1.2%) were not familiar with psychological issues of disaster. In relation to epidemiology and disaster surveillance, 47 (27.5%) were very familiar, 77 (45.0%) were familiar, 27 (15.8%) were neutral, 15 (8.8%) were slightly not familiar, and 5 (2.9%) were

not familiar. The mean level of familiarity with accident and disaster preparedness was 2.09 ± 0.71 , and overall, 34.45% of participants showed good disaster familiarity, 37.14%

showed fair disaster familiarity, and 28.41% showed poor disaster familiarity. (Table 6)

Table: Six

Disaster Familiarity Of Respondents Towards Disaster Handling Preparedness

Variable		Frequency	Percentage
Emergency preparedness terms and activities	Very familiar	69	40.4%
Emergency preparedness terms and activities	familiar	61	35.7%
Emergency preparedness terms and activities	Neutral	32	18.7%
Emergency preparedness terms and activities	slightly not familiar	4	2.3%
Emergency preparedness terms and activities	Not familiar	5	2.9%
incident Command System (ICS) and your role within it.	Very familiar	55	32.2%
incident Command System (ICS) and your role within it.	familiar	52	30.4%
incident Command System (ICS) and your role within it.	Neutral	33	19.3%
incident Command System (ICS) and your role within it.	slightly not familiar	14	8.2%
incident Command System (ICS) and your role within it.	Not familiar	17	9.9%
Disaster communication/Connectivity	Very familiar	53	31.0%
Disaster communication/Connectivity	familiar	70	40.95
Disaster communication/Connectivity	Neutral	30	17.5%
Disaster communication/Connectivity	slightly not familiar	11	6.4%
Disaster communication/Connectivity	Not familiar	7	4.1%
Accessing critical resources in disaster	Very familiar	57	33.3%
Accessing critical resources in disaster	familiar	63	38.8%
Accessing critical resources in disaster	Neutral	35	20.5%
Accessing critical resources in disaster	slightly not familiar	10	5.8%

Figure: Four

Incident command system and familiarity

The graph above shows that a survey was conducted among ED staff to assess disaster familiarity. They were questioned about the incident command system (ICS) and their role within it. About 171 participants took part in the survey, in

which 55(32.16%) respondents were very familiar, 52(30.41%) of the participants were somewhat familiar, 33(19.30%) were neutral, 14(8.19%) were somewhat not familiar and 17(9.95%) were not familiar with the incident command system and their role in it.

Table: Seven

Overall Disaster familiarity level

	Frequency	Percentage
Very Familiar	52	30.40%
Familiar	64	37.42%
Neutral	29	16.95%
slightly Not Familiar	16	9.35%
Not Familiar	10	5.84%

Table: Eight*Chi-square Test Result*

	Value	df	P-value
Clinical experience *knowledge	22.139a	24	.571
Clinical experience *attitude	32.750a	36	.624
Clinical experience *disaster familiarity	90.169a	63	.014

Discussion

Perceptions of crisis management knowledge, abilities, and readiness among Jordanian registered nurses were investigated. A consistent national nursing curriculum for disaster preparedness and nationwide drills to boost disaster knowledge, skills, preparedness, and confidence were needed, according to the research findings, which also showed that knowledge, skills, and disaster preparedness require ongoing reinforcement to improve self-efficacy for disaster management (26). According to a survey conducted by nurses in Hong Kong, although they are aware of the need for disaster planning, they are not sufficiently equipped to handle emergencies. Additionally, nurses' basic education should incorporate disaster management training (27).

This study assessed the preparedness for emergency and climate change-related disaster response among healthcare workers in the emergency departments of Lady Reading Hospital and Hayatabad Medical Complex, Peshawar. Participants included surgeons, medical officers, postgraduate residents, registered nurses, charge nurses, and OT technologists/technicians with varying levels of experience. Of the 171 participants, 59.6% were male, and 40.4% were female. The study found that 64.32% had good knowledge of accident and disaster preparedness, while 35.67% had poor knowledge, indicating gaps in preparedness. The mean knowledge score was 0.92 ± 0.18 . Most staff (87.7%) were aware of disasters in the past five years, and 85.4% recognized the hospital's key role in disaster management. However, 46.2% of emergency

department staff had not received disaster management simulation training in the past 2 years, which may contribute to increased patient mortality and morbidity. These findings highlight the need for improved training and knowledge among emergency department staff in disaster response.

The study also includes a section on disaster familiarity among healthcare workers in the emergency department regarding disaster preparedness, which contains seven questions. Disaster familiarity shows that 30.40% were very familiar with disasters, and 37.42% were familiar with disasters. 40.4% of respondents were very familiar with disasters regarding the emergency preparedness terms and activities. This is slightly higher than a study conducted in Saudi Arabia (11.8%). (28)

This might be due to the duration of clinical experience in Ethiopia, where only 31.4% had worked for 3–6 years, while in our study, 39.8% of all respondents had that level of experience.

Conclusion

Assessing emergency department staff's knowledge, attitudes, and disaster preparedness provides valuable feedback on the effectiveness of training programs and helps identify areas for improvement in disaster preparedness. This study at Lady Reading Hospital and Hayatabad Medical Complex found that ED personnel have limited knowledge of disaster preparedness, although most are aware of recent disasters and the hospital's role during emergencies. The majority of staff demonstrated a positive attitude toward disaster preparedness and agreed that it is a global health concern. Regular education programs and workshops are necessary to enhance emergency department personnel's preparedness. Emergency department staff generally demonstrate positive responses in emergency preparedness, incident command systems, and disaster communication. However, some staff exhibit limited or poor knowledge, attitudes, and familiarity with disasters, which could contribute to increased mortality, morbidity, and economic losses. There is a clear need for targeted education programs to properly train healthcare workers in disaster preparedness and help reduce associated costs.

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