

Original Research Article

Assessment of knowledge, attitude and practices of medical interns regarding disaster preparedness in a tertiary care hospital in Maharashtra, India

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ABSTRACT

Background: More than 2.6 billion people have been impacted by natural disasters in the past ten years, including earthquakes, tsunamis, landslides, cyclones, heat waves, floods, and extreme cold. These catastrophes result in large numbers of casualties, which might strain local medical facilities and during such times medical interns can be a crucial asset in managing the issues at the hospital. The aims of disaster preparedness in the hospital are to lower morbidity and mortality, quickly offer victims with medical support, and aid in a quick and complete recovery. The objectives of this study was to assess the knowledge, attitudes, and practices of medical interns regarding disaster preparedness in a tertiary care hospital.

Methods: A cross-sectional study was carried out among medical interns from a tertiary care hospital in a metropolitan city between September and November 2022. Medical interns were interviewed using a pre-tested semi-structured questionnaire on disaster preparedness and non-probability volunteer's opt-in sampling technique was adopted. Responses were entered and analysed in Microsoft Excel.

Results: 180 interns responded to the questionnaire, majority of them exhibited some basic knowledge of disaster plan and preparedness in the hospital. Their awareness and attitude for the disaster plan were significantly positive. The practices regarding disaster preparedness training and performance of drills were largely negative.

Conclusions: The study participants had an understanding of disaster preparedness and plans; however, they were lacking in knowledge regarding of their roles during drill. Practices regarding the disaster preparedness training and performance of drills were inadequate.

Keywords: Crisis, Disaster management, Disaster plan, Disaster preparedness, Medical interns

INTRODUCTION

Disasters refers to a significant functional deterioration or losses in human lives, property, the economy, or environmental resources.¹ The magnitude, frequency, and nature of disaster occurrences vary depending on a

region's topography, its population's ethnic makeup, and its financial resources. Every day, disasters of both natural and human origins strike the biosphere, having disastrous effects on public health in terms of injuries, suffering, and deaths as well as the loss of facilities and infrastructure.²

As per the WHO, disaster is a serious disruption of the functioning of a community or society causing widespread human, material, economic, or environmental losses, which exceeds the ability of the affected community or society to cope using its own resources.³

According to World Disasters Report (2023), Climate-related hazards continued to increase in prominence in 2020-2021. In those two years, 90.3% of recorded natural disasters were triggered by climate- and weather-related hazards. This compares to 7.3% by geological hazards like earthquakes and volcanic activity. The remainder were caused by epidemics (excluding COVID-19) and insect infestations such as locusts. The number of geological hazards have remained stable, whilst climate- and weather-related disasters continues to grow.⁴ These disasters affected close to 1.8 billion people- many of whom were injured, left homeless or without livelihoods-jeopardizing the progress made in sustainable development and adding to the burden of an already overstretched humanitarian system.⁵

Disaster preparedness refers to measures taken to prepare for and reduce the effects of disasters. This entails anticipating them, attempting to prevent them, minimising their impact on populations that are more susceptible to them, and successfully responding to any fallout.⁶ As per the department of homeland security/federal emergency management agency, disaster preparedness is a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response.⁷

The COVID-19 pandemic had a profound impact on how healthcare professionals view disaster preparedness. The objectives of disaster preparedness in the hospital are to lower morbidity and mortality, quickly offer victims with medical support, and aid in a quick and complete recovery.⁸ Medical interns are often among the first responders who provide medical assistance to victims. Because of their availability, flexibility, specialised expertise, cooperation, and community involvement, they are beneficial healthcare workforce in disaster preparedness.

Medical interns can be better prepared to deliver efficient care in an emergency by receiving the proper training and preparing them for disasters. Their perception towards disaster preparedness can determine how well they can respond to emergency situations.

Therefore, the purpose of this study was to assess their knowledge, attitude and practices regarding disaster preparedness.

Objectives

To assess the the knowledge, attitude and practices of medical interns regarding disaster preparedness in a

tertiary care hospital. To suggest suitable recommendations based on study findings.

METHODS

Study design and setting

This observational cross-sectional study was conducted for 3 months duration from September to November 2022 among medical interns from a tertiary care hospital in a metropolitan city in Maharashtra, India.

Sample size calculation

A sample size of 180 interns was achieved, based on feasibility and availability during the study period.

Study participants and sampling

The study included all the medical interns working in the designated tertiary care hospital in a metropolitan city in Maharashtra, India during the study period. “non-probability volunteers opt-in” sampling technique was adopted.

Inclusion criteria

Medical interns present in the hospital during the study period. Those who provided informed consent to participate in the study.

Exclusion criteria

Interns who were unavailable or refused to participate.

Ethical approval

The study was approved by the Institutional Ethics Committee no. IEC/469/June/2022 of the hospital. Written informed consent was obtained from all participants before the study commenced.

Data collection tool and technique

A pre-tested semi-structured questionnaire was constructed taking references from few literatures relevant to our study setting and participants. It was designed to reflect their knowledge about disaster preparedness as well as their attitude and practices regarding it. The questionnaire was pre-tested before beginning the data collection and necessary changes were made. The interns were interviewed through face-to-face, ensuring confidentiality and accuracy.

Statistical analysis

The collected data were entered and analyzed using Microsoft Excel. Descriptive statistics such as frequencies

and percentages were calculated to summarize the findings.

RESULTS

A total of 180 medical interns completed the questionnaire. Among them, 84 were female and 96 were male students of 22-24 years age group. The mean age of the study participants was 22.91 ± 0.71 years. 34 interns were day scholars, and the rest 146 were residing in the hostel. About 91% of the male interns and 89% of the female interns did not receive any formal training on disaster management previously (Figure 1).

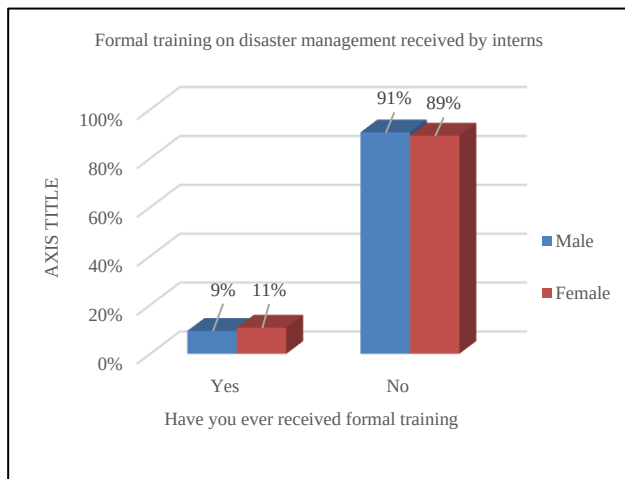


Figure 1: Any formal training on disaster management received by interns (n=180).

Interns were found to have some theoretical knowledge of disaster preparedness. About 77% knew what a disaster is, whereas only 58% knew what a disaster plan is. Only 12% said they knew where to find the disaster plans. Out of 180 students only 63% knew what disaster preparedness is. Only 36% knew what drills are, and only 21% said they knew their functions during a drill (Table 1).

Table 1: Knowledge regarding disaster among study participants (n=180).

Knowledge	Yes, N (%)	No, N (%)
Do you know what a disaster is?	139 (77)	41 (23)
Do you know types of disaster?	151 (84)	29 (16)
Do you know what a disaster plan is?	105 (58)	75 (42)
Do you know where to find the disaster plan?	21 (12)	159 (88)
Do you know what drills are?	64 (36)	116 (64)
Do you understand your functions during a drill?	37 (21)	143 (79)
What is disaster preparedness?	114 (63)	66 (37)

Table 2: Attitude regarding disaster preparedness among the study participants (n=180).

Attitude	Agree, N (%)	Disagree, N (%)	Unsure, N (%)
Do you think it is necessary to have a disaster plan?	180 (100)	0	0
I need to know about disaster plans	176 (98)	0	4 (2)

Continued.

Responses received from medical interns regarding disaster preparedness attitude are summarized in Table 2 which are as follows. Almost 98% interns agreed to the need to know about disaster plans, 98% said management should be adequately prepared when a disaster occur, 79% believed that disaster planning is for all people in the health-care setting, 98% agreed that potential hazards likely to cause disaster should be identified and dealt with, 98% thought that training is necessary for all health-care workers, 100% said that disaster plan is necessary, and 97% said that it needs to be regularly updated. Only 15% students said disasters are unlikely to happen in their hospital. 92% of interns disagreed that only medical professionals should handle disasters. They held the opinion that all management should be involved in disaster management. Those who said that drills should be conducted in the hospital were 83% (Table 2).

Table 3 illustrates the percentages of the study participants' practice regarding disaster preparedness which are as follows: only 3% of the study participants knew that disaster drills are done at their hospital, while 34% said they are not done, and 63% did not know. No one knew the type of drills done. None of the interns believed there is ongoing training at their place, and 48% said there is no ongoing treatment, while 52% did not know about any ongoing treatment. Majority of respondents were unaware of ongoing training, which may have prevented them from participating in training. Majority of interns i.e. 70 did not know about regular updates of disaster plans. According to interns, 76% never faced any disaster, and 98% were never a part of disaster management team. 13% interns said that their hospital was involved in any disaster in recent last, about 60% said that no latest disaster was in the hospital, while 27% did not know about this. About 80% believed that their practice for disaster preparedness was insufficient. 86% of the study participants said that disaster training should be a part of internship program. This shows that there is a gap in the disaster preparedness practices, and that more needs to be done to improve both preparedness and disaster management practices (Table 3).

Attitude	Agree, N (%)	Disagree, N (%)	Unsure, N (%)
Disaster planning is for a few people in the hospital	32 (18)	143 (79)	5 (3)
Management should be adequately prepared when a disaster occurs	176 (98)	4 (2)	0
Potential hazards likely to cause disaster should be identified and deal with	176 (98)	4 (2)	0
Training is necessary for all health workers	176 (98)	0	4 (2)
Disaster plans need to be regularly updated	175 (97)	0	5 (3)
Disasters are unlikely to happen in our hospital	27 (15)	143 (79)	10 (6)
Disaster management is for nurses and doctors only	5 (3)	166 (92)	9 (5)
Drills should be conducted in the hospital	149 (83)	8 (4)	23 (13)

Table 3: Practice regarding disaster preparedness among the study participants (n=180).

Practice	Yes, N (%)	No, N (%)	I don't know, N (%)
Are disaster drills done at your hospital?	3	34	63
Is there ongoing training?	0	48	52
Is the disaster plan periodically updated by authority?	10	20	70
Have you ever faced any disaster?	22	76	2
Have you ever been a worker for disaster management team	0	98	2
Do you know about the latest disaster your hospital involved in	13	60	27
Do you believe your practice for disaster preparedness is insufficient?	80	9	11
Disaster training should be a part of internship program	86	5	9

DISCUSSION

This research was aimed at assessing the knowledge, attitude and practices of medical interns regarding disaster preparedness in a tertiary care hospital. The mean age of the study participants was 22.91 ± 0.71 years, according to the study's overall findings. The medical interns demonstrated some awareness of disaster planning and preparedness in the knowledge section. However, they had remarkably positive attitude towards disaster plan and disaster preparedness. They lacked in the knowledge and attitude regarding their functions during drill. The practices regarding the disaster preparedness training and performance of drills were quite inadequate.

A similar study by Singhal et al showed largely positive responses in knowledge and attitude, while responses for practices and drills were similar.⁸ Another KAP study on disaster management and mitigation among medical students by Sinha A et al concluded that the KAP of the undergraduate medical students about disaster preparedness and mitigation is very meagre.⁹ The reason for this difference may be that disaster preparedness and disaster management is only given theoretical exposure, and under such circumstances, medical undergraduates and interns tend not to participate in outreach initiatives.

A systematic review on knowledge, attitude and performance associated with disaster preparedness in Iranian nurses showed moderate levels of knowledge and performance and good attitudes associated with preparedness in disasters in the Iranian nurses.¹⁰ Nurses'

inadequate knowledge of disaster preparedness was attributed to authorities' failure to hold efficient training programs during their educational courses and working periods in hospitals. Ibrahim et al found that the study nurses had poor performance, acceptable attitudes, and little knowledge about emergency preparedness.¹¹ Ghanbari et al discovered that nurses had low levels of disaster preparedness and suggested putting training programmes into place to increase their preparedness for disasters.¹² Research also indicates that other hospital healthcare employees, such as medical record staff, may have low levels of knowledge as a result of poor planning and the failure to put hospital disaster preparedness strategies into practise.¹³

The current study was carried out in a tertiary care hospital of a metropolitan city in Maharashtra. The study may not be representative of the larger population of medical interns in other hospitals or geographic locations and the results may only be applicable to the specific hospital and group of interns studied. A qualitative method to the study's data collection would have produced in-depth knowledge. Further research should be done to overcome these limitations.

CONCLUSION

Disaster preparedness knowledge and training are essential for medical interns as they are often the first responders to emergencies and natural disasters and must be adequately prepared to handle the challenges they may encounter. The current study concluded that study participants had an understanding of disaster preparedness and plans, however they were lacking in

knowledge regarding of their roles during drill. Practices regarding the disaster preparedness training and performance of drills were inadequate and hence sincere work needs to be done with regard to ongoing training, conducting drills, and regularly updating the plans. By providing interns with the necessary skills and training of disaster preparedness, we can improve patient outcomes, ensure safety, and promote efficiency in the use of resources during emergency situations.

Recommendations

Comprehensive training program- based on the identified gaps, a comprehensive training program should be developed and implemented to address the specific needs of medical interns. The program should cover topics such as disaster risk reduction, emergency response, and the proper use of resources. After implementing the training program, it is important to evaluate its effectiveness in improving the disaster preparedness practices of medical interns. This can be done through pre- and post-training assessments and by tracking the application of knowledge in practice. Medical interns should be given opportunities to practice their disaster preparedness skills in simulated or real-life scenarios. This can help them build confidence and develop the ability to apply their knowledge in practice. In addition to training and education, it is important to foster a culture of disaster preparedness among medical interns. This can be done by promoting teamwork, communication, and a proactive approach to emergency situations.

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