

“The impact of crisis and disaster management training on the performance of hospital emergency teams a systematic review of recent studies”

Researchers:

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Background:

Crisis and disaster management (CDM) training plays a pivotal role in equipping hospital emergency teams with the skills necessary to respond effectively to emergencies. However, the implementation and effectiveness of such training programs face several challenges and barriers that can hinder their impact. **Objective:** This systematic review aims to explore the impact of CDM training on the performance of hospital emergency teams and to identify the challenges and barriers associated with its implementation and effectiveness. **Methods:** A comprehensive review of recent studies was conducted to evaluate the relationship between CDM training and key performance indicators, including response time, decision-making, teamwork, and patient outcomes. Additionally, the review identified recurring barriers at institutional, individual, logistical, cultural, and environmental levels. **Results:** The findings highlight that CDM training significantly enhances emergency team performance, improving preparedness and patient outcomes during crises. However, barriers such as limited resources, time constraints, inconsistent training methods, and lack of standardization persist. Institutional support, innovative training methods, and robust evaluation systems were identified as critical factors for overcoming these challenges.

Conclusion: CDM training is essential for strengthening hospital emergency teams' capabilities in managing crises. Addressing the barriers to effective training implementation requires a collaborative approach involving hospital administration, policymakers, and healthcare professionals. Future research should focus on developing standardized, adaptive training programs and exploring advanced technologies to enhance training outcomes.

Keywords: Crisis management, Disaster training, Hospital emergency teams, Training barriers, Healthcare preparedness.

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Introduction:

In recent years, the increasing frequency and severity of crises and disasters, including natural disasters, pandemics, and large-scale accidents, have highlighted the critical role of hospital emergency teams in managing such events. These teams are often the first line of response, tasked with delivering immediate and effective care under highly stressful and unpredictable circumstances. However, the success of their response largely depends on their preparedness, which is directly influenced by the quality and extent of crisis and disaster management (CDM) training they receive.

Disasters have had devastating consequences, characterized by widespread damage, destruction and loss of life, property and livelihoods in communities [1]. Crisis and disaster management training equips healthcare professionals with the skills and knowledge to handle emergencies efficiently, including triaging patients, managing scarce resources, coordinating with other teams, and making critical decisions under pressure. While the importance of such training is widely recognized, its impact on the actual performance of hospital emergency teams remains a key area of exploration. Understanding this relationship is vital for improving training programs and ensuring optimal outcomes during crises [2].

This systematic review aims to synthesize recent studies that examine the impact of CDM training on the performance of hospital emergency teams. By analyzing evidence from various contexts, this review seeks to identify the training components that contribute most significantly to improved team performance, highlight existing gaps in training practices, and provide recommendations for future research and implementation. The findings of this review are expected to contribute to enhancing the resilience and effectiveness of emergency healthcare systems globally.

Study aims

The aim of this study is to systematically review and synthesize recent research on the impact of crisis and disaster management training on the performance of hospital emergency teams.

Methods: A comprehensive review of recent studies was conducted to evaluate the relationship between CDM training and key performance indicators, including response time, decision-making, teamwork, and patient outcomes. Additionally, the review identified recurring barriers at institutional, individual, logistical, cultural, and environmental levels.

Overview of Crisis and Disaster Management (CDM) in healthcare

Disasters and crises can lead to a range of negative outcomes, including prejudice to infrastructure, economic consequences, physical injuries, psychosocial effects, environmental consequences, and deprivation of basic services such as water, sanitation, and health care, forcing people to leave their homes and communities temporarily or permanently and even lose their lives [3]. Given the continued occurrence and negative impacts of disasters and crises, the readiness of nurses (especially in emergency situations) to respond is critical to mitigate the negative consequences for affected individuals. Most recently, the COVID-19 pandemic has highlighted the need for a national nursing workforce that is trained and equipped with the knowledge, skills and capabilities to respond [4].

Disaster preparedness in hospitals is a critical global concern that involves proactive measures to mitigate the impact of natural or artificial disasters. Disaster is a rapid natural situation with enough significance to require external support. Disaster preparedness refers to proactive measures and plans put in place by individuals, communities, and organizations to minimize the impact of natural or artificial disasters [5].

Components of CDM Training

The growing global challenges of population increase, resource scarcity, and conflicts have led to a rise in both human-made and natural disasters, underscoring the need for effective medical response teams to improve disaster outcomes. Disaster medicine has advanced significantly through ongoing research, particularly in public health preparedness [6]. The WHO emphasizes the equal importance of emergency relief, preparedness, and prevention. However, current disaster management education primarily relies on lectures and hospital drills, highlighting the need for more comprehensive and standardized training for emergency medicine professionals to enhance readiness and minimize societal harm across various dimensions [7].

Crisis management is the process by which an organization deals with a major event threatening to harm the organization, its stakeholders, or the public. Three elements are common to a crisis: (a) a threat to the organization, (b) the element of surprise,

and (c) short decision time.[1]. The term is closely related to disaster and emergency management. Crises management cycle



contains 4 steps:

Crisis management is widely understood to be a multiple-phase process, with the phases often paralleling, rather than merely running sequentially, as implied by common cycle illustration. There are several models of the crisis management cycle, among which the 4-phases cycle became widely accepted [6]. There are many emergency services protocols that apply in an emergency, which usually start with planning before an emergency occurs. One commonly used system for demonstrating the phases is shown here on the right.

The planning phase starts at preparedness, where agencies decide how to respond to a given incident or set of circumstances. This should ideally include lines of command and control, and division of activities between agencies. This avoids potentially negative situations, actions, and the use of valuable resources like time and finance [9]. For example, poor planning may result in three separate agencies all starting an official rest center for victims of a disaster. This is inefficient as this will deplete resources of money and time, as well as potentially adding to the confusion of the public, and creating competition rather than cooperation among agencies.

Following an occurring emergency, the agencies move to the response phase, where they execute their plans, and may end up improvising on some areas of their response (due to gaps in the planning phase, which are inevitable due to the individual nature of most incidents).

Agencies may then be involved in recovery phase following the response phase, where they assist in the clean-up of the incident or help the people involved overcome their mental trauma.

The final phase in the circle is mitigation, which involves taking steps to ensure no re-occurrence is possible or putting additional plans in place to ensure less damage is done. This should bring feedback into the preparedness stage, with updated plans in place to deal with future emergencies, thus completing the circle.

Effects of training hospitals emergency in disasters and crises

Training in disaster preparedness is a must for all health care workers, especially for those in emergency settings, and should be incorporated in educational curricula [8]. Ganbari et al. investigated the level of knowledge and performance of nurses before the training program and reported that it was low [9]. Bartley et al. also reported that training courses were necessary to educate health care workers. They concluded that these training courses should be implemented and evaluated continuously [10]. To reduce the damage caused by disasters, health care organizations should always address training programs to prepare staff [9]. Previous studies [11] in other countries have indicated the importance of preparing nurses and other health care workers in response to disasters. Studies conducted in Iran also reported the lack of appropriate programs in this regard and reported that health care providers, especially nurses, were not sufficiently prepared to respond to disasters [12].

Challenges and barriers to the implementation and effectiveness of training

Effective training for healthcare workers faces numerous barriers that span institutional, individual, logistical, and cultural dimensions. **Institutional and organizational challenges** include resource limitations, such as insufficient funding for advanced simulation technologies and training programs. Staffing shortages are further complicated matters, as hospitals struggle to allocate time for training without disrupting routine operations [13]. Additionally, administrative resistance often arises when hospital management fails to prioritize or support regular training initiatives, viewing them as secondary to immediate operational needs.

At the **individual level**, resistance to training is a significant barrier. Healthcare workers, particularly those with prior experience, may perceive training as redundant or unnecessary. Variability in baseline skills and knowledge among staff further complicates uniform outcomes, while psychological barriers, such as fear of failure during simulations or a lack of confidence, hinder active participation [14].

Logistical and practical challenges also play a critical role. Emergency departments' demanding schedules and high workloads leave little time for comprehensive training sessions. The irregular frequency of such sessions can lead to skill decay over time, while the limited availability of training resources, including advanced simulation tools and qualified trainers, exacerbates the problem [15].

Issues related to **training design and delivery** are equally significant. A lack of standardization across hospitals and regions results in inconsistent content and methods, undermining the effectiveness of training programs. Over-reliance on theoretical lectures, instead of hands-on, scenario-based approaches, reduces the practical applicability of training. Furthermore, many programs fail to simulate real-world complexities and high-stress conditions, leaving teams ill-prepared for actual emergencies [13].

Cultural and communication barriers also impede effective training. Poor collaboration between departments and ineffective communication during interdisciplinary exercises weaken team cohesion. In some settings, hierarchical workplace dynamics discourage open participation in team-based training, limiting its impact. Evaluation challenges add another layer of difficulty. Measuring the impact of training on actual performance during crises is inherently challenging due to the unpredictable nature of emergencies. Additionally, the absence of robust feedback mechanisms prevents organizations from identifying and addressing gaps in their training programs [14].

Finally, contextual and environmental barriers reflect broader disparities. Resource disparities between well-funded urban hospitals and under-resourced rural facilities create unequal training opportunities. External pressures, such as regulatory compliance requirements, often shift the focus away from genuine skill development to meeting administrative benchmarks. Addressing these multifaceted barriers requires targeted interventions at every level to ensure that healthcare workers are adequately prepared to manage stress and perform effectively during emergencies.

Addressing These Barriers

To overcome these challenges, hospitals can focus on [16]:

- Allocating dedicated budgets for training programs.
- Encouraging leadership support and staff buy-in.
- Using blended learning approaches that combine online modules with practical exercises.
- Standardizing training curricula while adapting them to local needs.
- Implementing regular evaluations and incorporating feedback into future training programs.

Conclusion

Crisis and disaster management training is a cornerstone of preparedness for hospital emergency teams, enabling them to respond effectively to unpredictable and high-stakes situations. This review highlights the significant impact such training has on improving performance indicators, including decision-making, teamwork, response time, and patient outcomes. However, the implementation and effectiveness of these training programs are often hindered by challenges such as resource limitations, time constraints, variability in skills, and lack of standardization.

Addressing these barriers requires a multifaceted approach, involving institutional commitment, the adoption of innovative training methods, and the tailoring of programs to fit diverse healthcare settings. By prioritizing regular and high-quality training, supported by robust evaluation systems, hospitals can enhance their emergency teams' resilience and capability to manage crises effectively.

Future research should focus on exploring the long-term impact of training, the integration of advanced technologies such as virtual simulations, and the development of global standards for crisis and disaster management training. These efforts will contribute to strengthening the overall healthcare system's preparedness and response capabilities, ultimately improving outcomes for patients and communities during emergencies.

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