REVIEW

Challenges for Nurses in Disaster Management: A Scoping Review

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Abstract: To reduce the impact of disasters, healthcare providers, especially nurses, need to be prepared to respond immediately. However, nurses face several challenges in all phases of disaster management. The findings of a literature review based on scoping approaches, which utilized the Joanna Briggs Institute methodology, indicated that the major barriers facing nurses include the following: (1) disaster nursing is a new specialty; (2) inadequate level of preparedness; (3) poor formal education; (4) lack of research; (5) ethical and legal issues; and (6) issues related to nurses' roles in disasters. Educators, researchers, and stakeholders need to make efforts to tackle these issues and improve disaster nursing.

Keywords: disaster nursing, disaster preparedness, disaster response, challenges

Introduction

Disasters not only significantly affect healthcare institutions and providers but also impact the lives of people and economies worldwide. For instance, in the last 10 years, more than 2.6 billion people were affected by disasters.[1] There are three important things to know about how disasters relate to health. First, disaster is defined by the World Health Organization (WHO) as any incident that could end human life or cause health-related harm and requires immediate response with sufficient manpower and resources, preparedness, planning, response, and recovery by many agencies, including healthcare institutions.[2] Second, hospitals must increase their capacity in order to effectively respond to disasters; large-scale disasters have very negative impacts on hospitals.[3] Third, as the largest healthcare provider group, nurses play critical roles in holistically caring for injured people and their families throughout the four phases of disaster management.

A lack of proper disaster management processes creates a chaotic and ineffective response and care measures. Disaster management processes begin with identifying risks that might impact communities, families, individuals, and hospitals. Even though identifying disaster risks is very challenging and requires great effort from governments and related agencies, it is a fundamental and essential step in disaster management.[4] The second step is preparedness, which involves education and training, as well as conducting drills and developing plans and policies.[5–9] Involved parties include caregivers, community members, and healthcare providers, including nurses and organizations.[5–9] The third step—disaster response—starts after a disaster begins. The codes of response are announced in hospitals and include notifying hospital staff that there is a disaster, activating the disaster plan, increasing the surge capacity, receiving injured people and

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providing care to them, and communicating and coordinating with other agencies.[10–12] The final step is disaster recovery, where the main focus is returning back to normal daily routines.[13,14] All healthcare providers must follow these processes, including nurses, who are on the frontline in such situations. Furthermore, all hospitals must have plans and policies to ensure that disaster management is holistic and includes all phases, not only response.

During a disaster, hospitals receive victims and their families within a very specific period of time. Therefore, hospital managers and decision-makers must prepare nurses to be ready to respond rapidly and effectively to disasters. For holistic disaster preparedness, nurses must be involved in preparing and activating the plan and educated in disaster management, including intensive training on all issues expected to arise before, during, and after the response and drill simulations of different types of disaster scenarios (e.g., natural, eternal, external, biological, chemical, and radiological disasters).[3,15] Also, it is very important for hospital mangers and leaders to understand the disaster management barriers faced by healthcare providers. As one of the largest groups of healthcare providers, nurses play critical and significant roles in all aspects of providing healthcare to patients and their families. In disaster management, nurses work with other healthcare providers to identify and plan for risks, participate in preparedness education and training, respond efficiently and effectively in a timely manner, and participate in the recovery process with other disaster management teams.[14,15] In the nursing literature,[23] based on available evidences from published studies, several studies aimed to explore the barriers faced by nurses in terms of disaster management, but the findings have not been integrated together and summarized and discussed as a whole. To close this gap, all barriers for nurses during disaster must be understood clearly. Therefore, understanding the barriers nurses face in all disaster management phases will help increase their awareness, help decision-makers create new plans and policies, and improve quality of care during disasters. This knowledge will also help shape nursing response to disasters; improve disaster management preparedness measures, such as education, training, planning, and management; and allow nurses to respond to any type of disaster rapidly and effectively. Therefore, the aim of this scoping review is to synthesize and discuss the barriers of disaster nursing.

Methods

In this review, we adapted the Joanna Briggs Institute's scoping review methodology,[16] which consists of the following steps: (1) specify the research goals and question, (2) determine the inclusion and exclusion criteria for the studies, (3) identify the search strategies, (4) chart the results, (5) discuss the results, and (6) provide conclusions and recommendations. Therefore, the first step in the present review was based on the current gaps in the literature and the lack of a summary of the evidence related to barriers. The following research question guided the scoping review: what challenges obstruct nurses from achieving effective disaster management?

Second, the inclusion and exclusion characteristics included the publication year, language, participants, place, source type, setting, and focus of the study. The present study focused on the practical and knowledge-related challenges that could affect nurses. Table 1 shows the inclusion and exclusion criteria, which were applied to all reviewed articles.

Third, the search strategy involved finding articles on challenges facing nurses that obstructed them from achieving effective disaster management. The search included the following keywords: disaster nursing, barriers, challenges, and emergency nursing. Using the Saudi Digital Library, the Science Direct, Scopus, and Cumulative Index to Nursing and Allied Health Literature databases were searched for publications published between 2010 and February 2020.

Table 1 Inclusion and Exclusion Criteria for Study Selection

Criterion	Inclusion	Exclusion
Time frame	2010–February 2020	Articles outside of the 2010–2020 time frame
Language	English\Full article	Non-English\Abstract
Participants	Nurses inside and outside hospitals	Nursing students, physicians, paramedics, and other healthcare providers
Place	All countries	Nil
Type of source	Original research published in peer-reviewed journals or in the grey literature	Books, magazines, newspapers
Setting	Hospitals, communities, and disaster scenes	Nursing homes and nursing schools
Interesting phenomena	All challenges facing nurses	All studies not related to the study focus

Findings

The initial results from the identified databases yielded 700 articles. In addition, 20 articles were found using references and Google. All articles with abstracts were exported using Endnote x8 software and then explored in a Microsoft Word file. After duplicate articles were removed, 503 abstracts were read critically. In total, 10 articles exploring barriers to disaster nursing were included in this scoping review. Figure 1 shows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for selecting the articles. Barriers and challenges were extracted from the studies and charted in Table 2.

In the present review, six main challenges were identified: the newness of the disaster nursing specialty, lack of preparedness, poor formal education, lack of research, ethical and legal issues, and unclear roles. First, as disaster nursing is a new specialty, the lack of a paradigm, few evaluation tools, limited disaster experience, limited

availability of experts, and limited opportunities for training are among the major challenges for nurses in disaster management.[17,19,22,24] Second, the level of preparedness in terms of prehospital care, hospitals, and individuals (including nurses) poses a challenge for nurses. One study reported the prehospital care system as a big challenge for nurses,[17] while hospital preparedness was reported in several studies, which noted that hospitals have limited capacities, resources, and staffing, lack awareness about policies and procedures, and have poor planning and leadership.[17,22,24,25] The lack of preparedness of nurses was also reported as a vital challenge in many studies.[10,18,21–24] Third, poor formal education, including undergraduate and postgraduate curriculum issues, is another serious issue affecting nurses.[19,20,22–25] Fourth, the lack of research and evidence-based practice was also reported as a challenge for nurses.[10,19,23] Finally, ethics and legal issues[18,21] and uncertainty and ambiguity about nurses' roles[10,19,20,22] were considered barriers for nurses in disaster management.
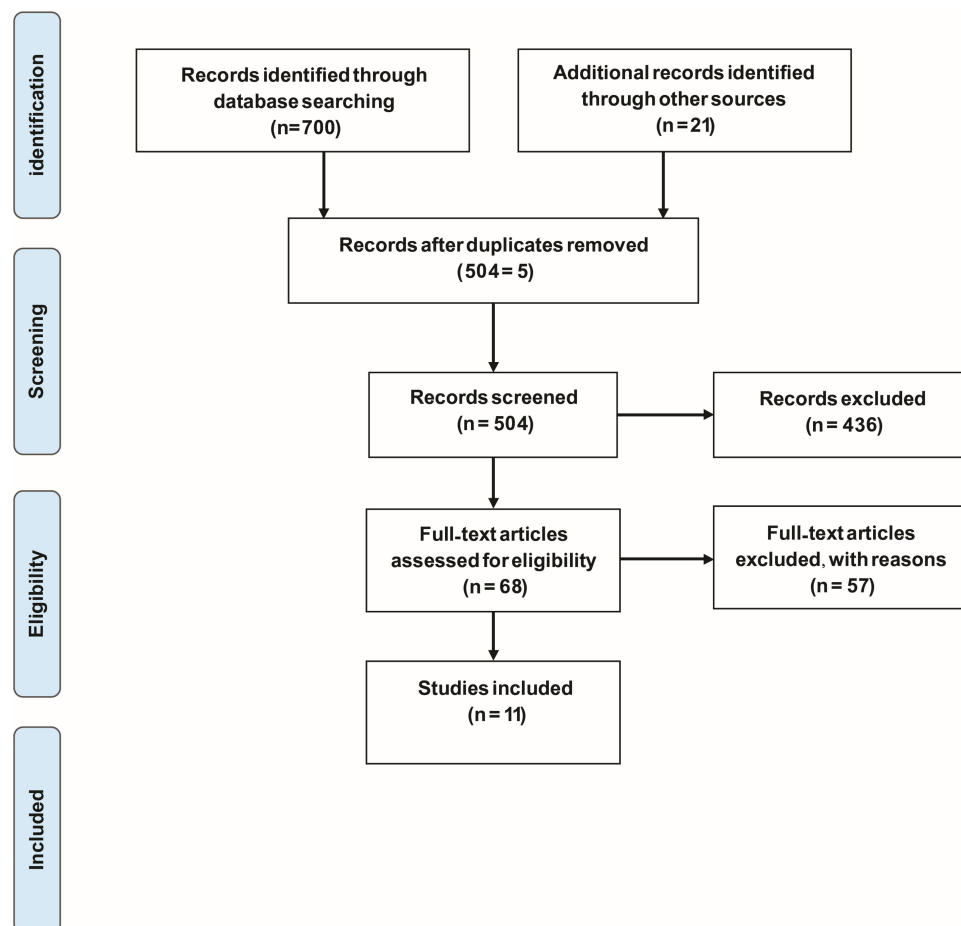

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).
Note: Adapted from Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097.[26]

Table 2 Barriers and Challenges Extracted from the Selected Studies

Selected Studies	Research Aim/Methodology	Place of Study	Barriers/Challenges
[17]	A qualitative study exploring barriers to continuity of care, and providing suitable solutions for potentially dischargeable patients during disasters	Iran	• Disaster paradigm • Pre-hospital system • Coordination and cooperation • Hospital preparedness • Resources and capacities • Patient knowledge • Planning
[18]	Description study implementing the WHO standards in an Emergency department; to describe challenges for nurses during disaster	Israel	• Logistical challenges, including constructing the hospital in a disaster zone, and equipment issues • Staff challenges, such as becoming oriented to a new and difficult environment • Patient challenges, including cultural differences, language barriers, and issues of follow-up • Ethical challenges unique to the disaster zone
[19]	A principal component analysis (PCA), which aimed to develop a valid, reliable scale that would identify and explore core competencies of disaster nursing, nurses' roles in disaster management, and barriers to developing disaster nursing in Saudi Arabia	Saudi Arabia	• Roles of nurses • Educational training program • Support from hospital administration • Evidence-based practice research • Evaluation tools
[20]	An integrative narrative analysis examining nurses' unique role in disaster management	Iran	• Organizational challenges • Managerial challenges • Education system • Role of nurses • Lack of Disaster educator • Lack of formal education • Nurse training
[21]	A qualitative study exploring Iranian nurses' disaster response experiences and perceptions of the competencies required for nurses in this environment	Iran	• Ethical issues • Allocation of resources • Privacy and confidentiality • Scope and scale of the disaster • Appropriate triage • Treatment priorities • Working autonomously • Informed consent • Restriction or violation of patient dignity and religious values • Documenting accurate information • Conflict • Legal issues

(Continued)

Table 2 (Continued).

Selected Studies	Research Aim/Methodology	Place of Study	Barriers/Challenges
[22]	A mixed methodology study exploring—from the nurses' perspective—challenges and resources related to carrying out their responsibilities and implications for nursing education and preparation for disasters	United States	• Disaster experience • Education and training • Hospital disaster policies and procedures • Role in the disaster management • Communication and leadership • Personal evacuation experience
[23]	A literature review highlighting issues facing disaster nursing and focusing on the challenges for public health nurses responding to and preparing for disasters win Australia. Specifically addresses public health nurses' awareness regarding their roles in disaster preparation and response given their unique skills and central public health position.	Australia	• Few studies • Lack of specialized journal • Lack of accessible programs • Nursing curriculum
[10]	A study exploring the willingness to respond of nurses using qualitative approach (focus groups)	Australia	• Uncertainty about the type of disaster • Uncertainty about nurses' roles • Uncertainty about access to information • Emergency nurses' preparedness • Workplace preparedness • Colleagues' preparedness
[24]	A quantitative survey exploring factors affecting nurses and doctors (at institution and individual levels)	Singapore	• Institution preparedness (leadership and peers) • Availability of training opportunities • Individual preparedness (prior experience in disaster response and family support)
[25]	A quantitative study using a survey of pediatric nurses to explore associated factors affecting their welling to respond to a disaster	United States	• Lack of a disaster plan • Lack of disaster training • No assigned role in the workplace disaster plan

Discussion

It is imperative to identify and summarize the challenges for nurses in disaster management for evidence-based practice and the improvement and development of the disaster specialty. Thus, this scoping review identified studies that aimed to explore the challenges nurses face in disaster management around the world and summarized the most common challenges reported in those studies.

Disaster nursing started with Florence Nightingale (the founder of nursing science) during the Crimean War. She used environmental resources to treat victims and was the first healthcare practitioner to activate a triage system by sorting patients depending on their needs.[27] Disaster nursing gained importance during WWI due to nurses' pivotal role. After the events of September 11, 2001, the world changed, including the disaster management field, which received more attention.[27] However, it is still considered a new specialty as the concepts and standards have not been fully developed globally,[14,19] despite many efforts from educators and researchers around the world to define disaster nursing concepts, characteristics, scope of practice, and core competencies. Some universities started teaching disaster nursing to undergraduate and postgraduate students, which was recommended several times in the literature.[28] Since the newness of the disaster nursing specialty is considered a challenge for nurses, more effort must be made in the academic and clinical fields to enhance the development of this specialty.

There is a general agreement in the literature about the qualifications and formal education needed for disaster nursing. This is supported by the findings of this scoping review, which indicated that formal disaster nursing education is one of the biggest challenges for disaster nursing. As identified in an integrated literature review,[29] the

efforts made by researchers and educators to establish formal disaster nursing education included (1) developing and implementing teaching methods; (2) developing and implementing curriculum content; (3) determining the effectiveness of the education initiatives; (4) evaluating students' knowledge, skills, and confidence; (5) evaluating disaster drill simulations; and (6) developing undergraduate education and training courses. As reported in some studies, nurses are not willing to respond to disasters as they have no experience or formal education in this area.[14] Therefore, more effort is needed to develop disaster nursing education and a curriculum to enhance nurses' competencies, confidence, and response.

The concept of disaster preparedness is very broad and includes the actions taken before a disaster occurs to ensure readiness. This involves identifying risks; creating plans and policies; developing education and training programs, including drills and exercises for readiness; preparing the healthcare system for a disaster response; and increasing disaster knowledge and awareness among healthcare providers, including nurses. This scoping review found that attaining a level of preparedness for nurses to work effectively is one of the biggest challenges in responding to a disaster. One of the related factors is a prehospital system that is not fully developed or coordinated with other healthcare institutions, such as hospitals. This issue was reported several times in the literature. For instance, Roy et al[30] confirmed the lack of organization of the prehospital system in India, while Feizolahzadeh et al[17] indicated that the most common related issues in Iran were insufficient risk communication, weak prehospital measures, and inappropriate distribution of patients to hospitals. A prehospital system in which all first responders, such as police officers, firefighters, and paramedics, work together is essential. Therefore, more effort must be made to improve this area and ensure that nurses and other healthcare providers coordinate and work effectively. Furthermore, it is recommended that nurses participate in creating disaster policies, procedures, and planning measures at the regional level. However, it is important to note that this issue might not apply to all countries, as some of them might have strong prehospital systems that work effectively in daily routines and disaster situations.

It is also very important to prepare hospitals; the literature reported this as one of the challenges in nursing disaster management. Therefore, it is recommended that all hospitals develop disaster plans that address surge capacity in terms of staffing and resources, decontamination,

communication, the safety index, and survivor support.[15] The last point in disaster preparedness is the readiness of the healthcare providers themselves. Several studies indicated that nurses are not fully prepared for disasters, including that of Said and Chiang,[31] which summarized the evidence using systematic approaches. Therefore, more effort to enhance nurses' preparedness is essential.

During disasters, ethical and legal challenges for nurses are especially significant. The differences from the challenges of everyday practice are mainly related to the allocation of resources, the lack of privacy and confidentiality, dealing with the scope and scale of a disaster situation, appropriate triage, treatment priorities, working autonomously, informed consent, documentation, and conflicts with colleagues.[21] In addition, as emphasized by Alpert et al,[18] nurses might face ethical challenges when they have a large influx of patients during a disaster response and limited resources. Some performance objectives for healthcare providers, including nurses, which were identified by Schultz et al,[32] include listing ethical principles related to the emergency or disaster, being familiar with approaches for allocating resources during a disaster response, and being able to deal with an ethical dilemma. It is recommended that ethical issues be included in the disaster education priorities at the undergraduate and master's degree levels. Continuing education for nursing staff on ethical and legal issues is also recommended. In addition, since research in this area is very limited, more effort and contributions from experts and researchers will enhance nurses' ability to work confidently in an ethical manner during a disaster.

This scoping review also identified the lack of research and evidence-based practice in the disaster nursing literature as a challenge for nurses in this area of practice.[19,23] Furthermore, the paucity of research on disaster nursing negatively impacts the professionalism and quality of nursing practice during disasters. By utilizing a three-round Delphi technique, which aimed to explore the priorities of international nursing research related to disasters by Australian researchers, Ranse et al[33] concluded that research is needed in many areas of disaster nursing management, including education, training, and the curriculum, as well as in exploring relevant clinical and psychological issues. Therefore, an increased focus on disaster nursing research prioritizing high-quality knowledge and practice would enhance the awareness of nurses and encourage education and training. Conducting interdisciplinary research is also recommended.

As nurses are the largest group of healthcare providers, they play significant roles in preparing for disasters, including identifying risks, analyzing identified risks, creating plans, conducting drills, participating in education and training activities, and identifying areas for development and improvement.[33–35] During response—the most important phase of disaster management—nurses activate the disaster plan in their hospitals, triage cases, provide emergency treatment for injured people, and help coordinate evacuations and the transportation of patients to other medical facilities. In terms of recovery, nurses participate in restoring the normal pre-disaster routine. However, according to the nursing literature,[5] nurses are confused about their roles in disasters, which creates a significant challenge for disaster management overall. To tackle this problem, managers and decision-makers across countries, cultures, and healthcare systems must work hard to create a scope of practice, policies, and procedures with clear responsibilities and accountability for all healthcare providers of the disaster management team.

Implications, Recommendations, and Limitations

This study revealed several implications for improving disaster nursing worldwide. (1) Develop disaster nursing education and a curriculum for both formal and continuous education and training at the workplace. It is highly recommended that decision-makers and leaders ensure the availability of educational activities that enhance nurses' knowledge and skills to respond effectively and with more confidence and competency to any kind of disaster. (2) Improve the prehospital system to ensure that nurses can work effectively within the healthcare system with no confusion or chaos due to a poor system or poor coordination between the organizations involved in the disaster response. (3) Improve the disaster plan in hospitals to ensure that all healthcare providers work as a team and understand each other during their response. To improve this area, it is recommended that all stakeholders participate in creating the disaster plan, including nurses. The purpose and components of the plan should also be based on the needs and vulnerabilities of risk assessments. (4) Improve the policies and procedures related to disaster nursing to ensure that nurses have no conflict issues, including ethical issues. It is recommended that experts in the nursing field ensure that policies and procedures are updated and are familiar to all nurses and other healthcare providers.

This scoping review identified the challenges of disaster nursing in general. Further research and systematic review are needed.

Conclusion

In all phases of disaster management, nurses face challenges, including in education, research, practical matters, and ethical and legal issues. Disaster nursing is still considered a new specialty and requires further development, including improving education and training by developing the curriculum and educational activities at hospitals. These actions will help nurses competently deal with disasters and improve the disaster nursing practice. Also, more disaster nursing research is needed to overcome the challenges related to evidence-based practice. More effort is also needed to create guidelines for ethical and legal matters and to outline the scope and roles of nurses in disaster management to reduce their confusion.

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Disclosure

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