

# Components of the Empowerment of Volunteers Providing Nursing Services During Disasters: A Systematic Review

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Received: 18 Sep 2024

Published: 10 Jun 2025

## Abstract

**Background:** Nursing service providers play an important role in disaster response teams. However, their ability to deal with disasters is less than desirable. This situation can lead to poor performance in caring for victims. On the other hand, trained and empowered volunteers can play a valuable role in achieving the goals of disaster management at all stages, from mitigation to recovery. Therefore, this systematic review was conducted to investigate the dimensions and key components of empowering nursing service providers in responding to disasters.

**Methods:** In this study, an electronic search of the PubMed, Scopus, Web of Science, Embase, and ProQuest databases and gray literature was performed. The searches were conducted on October 14, 2023. Other search resources, such as organizational websites and key journals, were manually searched. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) checklist was used to select the studies. The findings were analyzed via thematic content analysis using MAXQDA2020 software. The Joanna Briggs Institute checklists were used to evaluate the quality of studies.

**Results:** A total of 16 studies out of 8067 studies were included in this analysis. The selected studies included 3 studies from the United States, 1 from Turkey, 1 from Saudi Arabia, 2 from Iran, 3 from Republic of Korea, 2 from China, 2 from Switzerland, and 2 from Brazil. Two main themes, including individual elements and organizational elements, as well as 6 categories and 27 subcategories, were extracted. The categories included management and leadership abilities, professional and knowledge-based capabilities, personality and behavioral abilities, professional and organizational empowerment, organizational support packages, and capacity building.

**Conclusion:** The results of this study emphasized that the volunteers providing nursing services should have certain characteristics and capabilities. These characteristics may include strong communication skills, the ability to work under pressure, empathy, and sufficient technical knowledge in the field of healthcare. Policymakers and managers should also have the necessary support for the nurses and play an effective role in empowering them by creating innovative and continuous training programs. Such training programs help improve the professional skills of volunteers and facilitate their empowerment to provide better quality services.

**Keywords:** Volunteer Empowerment; Nursing Service Provider; Disaster; Emergency Response; Systematic Review

**Conflicts of Interest:** None declared

**Funding:** Iran University of Medical Sciences.

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**Cite this article as:** Roshanravan M, Moslehi S, Seyedin H. Components of the Empowerment of Volunteers Providing Nursing Services During Disasters: A Systematic Review. *Med J Islam Repub Iran*. 2025 (10 Jun);39:79. <https://doi.org/10.47176/mjiri.39.79>

## Introduction

Disasters are inevitable and occur in various parts of the world, affecting numerous communities (1). The United Nations Office for Disaster Risk Reduction (UNISDR) de-

scribes a disaster as a significant disturbance in the operations of a community or society caused by dangerous events interacting with vulnerabilities and exposure levels, result-

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### ↑What is “already known” in this topic:

Nursing service providers play a very important and constructive role in the management of victims during disasters. However, a comprehensive study has not been conducted to identify the factors affecting their empowerment.

### →What this article adds:

This study, by reviewing existing studies and documents, identifies the dimensions affecting the empowerment of nursing service volunteers in disasters. By understanding these components, policymakers can pave the way for further empowerment of this group of volunteers in disasters.

ing in widespread human, material, economic, and environmental damages and consequences. The UNISDR defines a disaster as a major interruption in the operations of a society, leading to extensive human, material, economic, and environmental losses (2).

The frequency and intensity of disasters are on the rise globally. The impact of disasters on human health, loss of life, and economic expenses is escalating. In 2022, the Center for Research on the Epidemiology of Disaster (CRED) documented about 387 instances of natural disasters, such as earthquakes, volcanoes, floods, and landslides, leading to 30,704 deaths, affecting around 185 million people, and causing economic losses amounting to 223.8 billion dollars (3).

Human resources, particularly healthcare providers, are the most crucial element in delivering quality care and services during accidents and disasters. The effective combination and coordinated efforts of these forces can significantly advance the goals of disaster medical services. Conversely, any shortcomings or issues in this collaboration can lead to adverse outcomes (4). Healthcare providers must be equipped with the necessary capabilities to respond effectively to a disaster. This necessitates comprehensive training and skills in disaster response and management (5).

There is much evidence that trained volunteers play an effective role in improving the management of disasters in all stages, from mitigation to recovery (6-8). However, according to the research, this group has not received enough training and is not ready to perform tasks under such conditions (9-11). Examining the current state of preparation and capabilities of nursing service providers in disasters and emergencies can lead to better response and recovery from disasters (12). Empowerment, a crucial aspect, refers to preparing a workforce with a high degree of flexibility and freedom of action in decision-making, and in fact, it is a continuous and permanent process (13). A lack of empowerment of nursing service providers leads to adverse outcomes and may hinder effective disaster recovery in communities (14, 15).

Therefore, this review examined the dimensions and key components of the empowerment of volunteer nursing service providers in responding to disasters to provide solutions to their ability to deal with emergencies and disasters.

This study aimed to identify the key dimensions and components of empowering volunteer nursing providers, helping policymakers and health managers design and implement targeted training and support programs. This will greatly contribute to enhancing professional capabilities

and improving the responsiveness of health systems in critical situations, and ultimately preserving the lives and health of the community.

## Methods

### Design and Registration

This systematic review was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (16). The protocol was registered in the PROSPERO database with the registration code CRD42024494706.

### Eligibility Criteria

Searches were conducted on October 14, 2023. All studies in English before this date were included in this systematic review. The inclusion criteria included all studies related to the objectives of the systematic review, namely, the empowerment of volunteers providing nursing services in disasters. There was no limitation in choosing the study method, including descriptive, analytical, quantitative, and qualitative studies. Studies unrelated to the preparation and empowerment of volunteers providing nursing services in disasters, review studies, and a lack of access to the full text of the article were excluded from this study (Table 1).

### Information Sources

The search included any published articles (original, editorial, communication, opinion, etc) that mentioned the following keywords: "empowerment," "nursing service provider," "nurse," "emergency medical technician," "volunteer," and "disasters." Studies unrelated to the preparation and empowerment of volunteers providing nursing services during disasters and non-English articles were excluded from this study (Table 2).

An electronic search was performed in the ProQuest, PubMed, Scopus, Web of Science, and Embase databases. Databases were selected based on their relevance to health, nursing, and disaster management literature. PubMed and Scopus were chosen for their extensive range of biomedical and health science articles, while ProQuest and Embase provided supplementary resources from interdisciplinary fields. Other search sources, such as meta-search engines; organizational websites, including the World Health Organization, American Nurses Association, International Council of Nurses, and International Federation of Red Cross and Red Crescent Societies; and key journals like Disaster Medicine and Public Health Preparedness, Emergency Medicine Journal, and BMC Emergency Medicine,

Table 1. Inclusion and Exclusion Criteria

Eligibility criteria	Inclusion criteria	Exclusion criteria
Community	Nurses - Emergency Medical Technicians	-----
Context	Natural Disaster - Man-made Disaster	-----
Language	English	All studies except English
Date	All studies before 2023.10.14	After this date
Kind of study	All studies, including primary research, academic papers (dissertations, research, and committee reports), gray literature, including government reports, ongoing reports, guidelines, books, and other relevant documentation, were included.	Review studies

Table 2. The Search Strategy of the Study

Query	Database	Number of papers
(Empowerment[MH] OR Empowerment[TIAB] OR Empowering[TIAB] OR strengthening[TIAB] OR "skill enhancement"[TIAB] OR "disaster training"[TIAB] OR "disaster Education"[TIAB] OR "disaster Preparedness"[TIAB] OR "disaster Readiness"[TIAB] OR "disaster Competenc*" [TIAB] OR "Emergency Preparedness"[TIAB]) AND ("Health care Volunteer"[TIAB] OR "Disaster volunteer"[TIAB] OR "Healthcare Provider"[TIAB] OR Nurs*[TIAB] OR "Disaster Nurs*" [TIAB] OR "Emergency Nurs*" [TIAB] OR "Emergency Medical Technician"[TIAB] OR "EMT"[TIAB] OR Paramedic*[TIAB] OR "Health Care Worker"[TIAB]) AND (Disaster[MH] OR Disaster*[TIAB] OR Crisis[TIAB] OR Emergencies[MH] OR Emergenc*[TIAB] OR Catastrophe[TIAB] OR Event[TIAB] OR Incident[TIAB] OR Accident[TIAB] OR Hazard[TIAB])	PubMed	1278
TITLE-ABS-KEY(Empowerment OR Empowering OR strengthening OR "skill enhancement" OR "disaster training" OR "disaster Education" OR "disaster Preparedness" OR "disaster Readiness" OR "disaster Competenc*" OR "Emergency Preparedness") AND TITLE-ABS-KEY("Health care Volunteer" OR "Disaster volunteer" OR "Healthcare Provider" OR Nurs* OR "Disaster Nurs*" OR "Emergency Nurs*" OR "Emergency Medi* Technician" OR "EMT" OR Paramedic* OR "Health Care Worker") AND TITLE-ABS-KEY(Disaster* OR Crisis OR Emergenc* OR Catastrophe OR Event OR Incident OR Accident OR Hazard)	Scopus	2664
TS=(Empowerment OR Empowering OR strengthening OR "skill enhancement" OR "disaster training" OR "disaster Education" OR "disaster Preparedness" OR "disaster Readiness" OR "disaster Competenc*" OR "Emergency Preparedness") AND TS=("Health care Volunteer" OR "Disaster volunteer" OR "Healthcare Provider" OR Nurs* OR "Disaster Nurs*" OR "Emergency Nurs*" OR "Emergency Medi* Technician" OR "EMT" OR Paramedic* OR "Health Care Worker") AND TS=(Disaster* OR Crisis OR Emergenc* OR Catastrophe OR Event OR Incident OR Accident OR Hazard)	WOS	2003
Title, abstract (Empowerment OR Empowering OR strengthening OR "skill enhancement" OR "disaster training" OR "disaster Education" OR "disaster Preparedness" OR "disaster Readiness" OR "disaster Competenc*" OR "Emergency Preparedness") AND Title, abstract ("Health care Volunteer" OR "Disaster volunteer" OR "Healthcare Provider" OR Nurs* OR "Disaster Nurs*" OR "Emergency Nurs*" OR "Emergency Medi* Technician" OR "EMT" OR Paramedic* OR "Health Care Worker") AND Title, abstract (Disaster* OR Crisis OR Emergenc* OR Catastrophe OR Event OR Incident OR Accident)	Proquest	296
('empowerment'/exp OR 'empowerment':ti, ab, kw OR 'empowering':ti, ab, kw OR 'strengthening':ti, ab, kw OR 'skill enhancement':ti, ab, kw OR 'disaster training':ti, ab, kw OR 'disaster education':ti, ab, kw OR 'disaster preparedness':ti, ab, kw OR 'disaster readiness':ti, ab, kw OR 'disaster competenc*':ti, ab, kw OR 'emergency preparedness':ti, ab, kw) AND ('health care volunteer':ti, ab, kw OR 'disaster volunteer':ti, ab, kw OR 'healthcare provider':ti, ab, kw OR 'nurs*':ti, ab, kw OR 'disaster nurs*':ti, ab, kw OR 'emergency nurs*':ti, ab, kw OR 'emergency medical technician':ti, ab, kw OR 'emt':ti, ab, kw OR 'paramedic*':ti, ab, kw OR 'health care worker':ti, ab, kw) AND ('disaster'/exp OR 'disaster*':ti, ab, kw OR 'crisis':ti, ab, kw OR 'emergency'/exp OR 'emergenc*':ti, ab, kw OR 'catastrophe':ti, ab, kw OR 'event':ti, ab, kw OR 'incident':ti, ab, kw OR 'accident':ti, ab, kw OR 'hazard':ti, ab, kw)	Embase	1826

were examined by manual searching to increase the comprehensiveness of the search sources.

### Study Selection

The records obtained from the searches were entered into EndNote Version 20, and duplicate sources were removed by the software. First, studies were screened based on titles and abstracts. In the selection phase, 2 authors (M.R. and Sh.M.) independently selected the studies. First, they extracted the full text of the selected studies from the screening stage and examined the full text of the studies in response to the main research question. All studies that were manually searched in the gray literature search process were directly entered into the selection phase. After reading the full text, studies that were considered irrelevant by both reviewers were excluded from the study. In cases where no agreement was reached, a third person from the team (H.S.) made the final decision.

### Quality Appraisal

Two members of the Department of Health in Disasters and Emergencies assessed the quality of the articles using the Joanna Briggs Institute (JBI) checklists(17). The JBI Critical Appraisal Tool includes different types of checklists that are used according to the type of study. Accord-

ingly, to assess the quality of qualitative studies, cross-sectional studies, and gray literature, checklists were selected from those appropriate to the study methodology. Then, each item in the checklist was scored as follows: Yes = 1 point, (the study meets the criterion), No = 0 points (the study does not meet the criterion), and Uncertain = 0.5 points (uncertainty about whether the study meets the criterion), and the scores for each checklist were calculated. Finally, the scores of studies with a score of 0 to 3 were reported as weak, 4 to 5 as moderate, and 6 to 8 as strong (18).

### Data Extraction

In this review, study information including the author's name, year of publication, study method, study object, and the main results was extracted from each included study.

### Data Analysis

The articles were analyzed using thematic content analysis. The framework was established by Braun and Clarke. The analysis involved the following 6 phases: (1) familiarization with the data; (2) generating initial codes; (3) identifying themes; (4) reviewing themes; (5) defining and naming themes; (6) writing up and reporting. Descriptive analysis was used to categorize each article based on authors, title, year, setting, study design, study objective, and

main findings. The authors obtained subcategories by reading the codes several times. Then, the categories were obtained by aggregating related subcategories, ultimately creating 2 main themes. This process was carried out using MaxQDA2020 software.

## Results

### Search Results

Based on the PRISMA checklist, 8067 studies were identified in the databases. A total of 3666 duplicate studies were excluded. After the titles and abstracts were read, 4339 studies were excluded. Finally, the full texts of 54 studies and 8 gray literature articles were reviewed by 2 reviewers. In the selection stage, 16 studies entered the data extraction stage (Figure 1). The final selected studies included studies conducted between 2008 and 2023. The selected studies included 3 studies from the United States, 1 from Turkey, 1 from Saudi Arabia, 2 from Iran, 3 from Republic of Korea, 2 from China, 2 from Switzerland, and 2 from Brazil. The characteristics of the selected studies are shown in Table 2.

### Data Analysis

The included studies were reviewed using thematic content analysis. The data analysis consisted of 6 steps, including familiarization with the interview, indexing, searching for themes, developing the themes, naming the themes, and reporting (19, 20). After immersion in the data, the codes were extracted from the text. The codes were categorized,

and subcategories were identified. They were obtained from the reclassification of subcategories and categories and by reviewing themes. MaxQDA2020 software was used in the data analysis process. Finally, 2 main themes, 6 categories, and 27 subcategories were extracted. Two main themes, including individual elements and organizational elements, effective in empowering volunteers to provide nursing services during disasters, were extracted from this systematic review. The categories included management and leadership abilities, professional and knowledge-based capabilities, personality and behavioral abilities, professional and organizational empowerment, organizational support packages, and capacity building (Table 3).

### Theme 1- Individual Elements

#### 1-1: Management and Leadership Abilities

The findings of this study showed that one of the important dimensions in empowering nursing service providers in disasters are individual elements. Considering that nurses assume wide roles in the management teams of incidents and disasters, having some characteristics in the volunteers providing nursing services, such as management and leadership capabilities, can be very helpful. Having communication skills, information management, resource management, planning, and operations management are among these skills (21, 24, 27, 29).

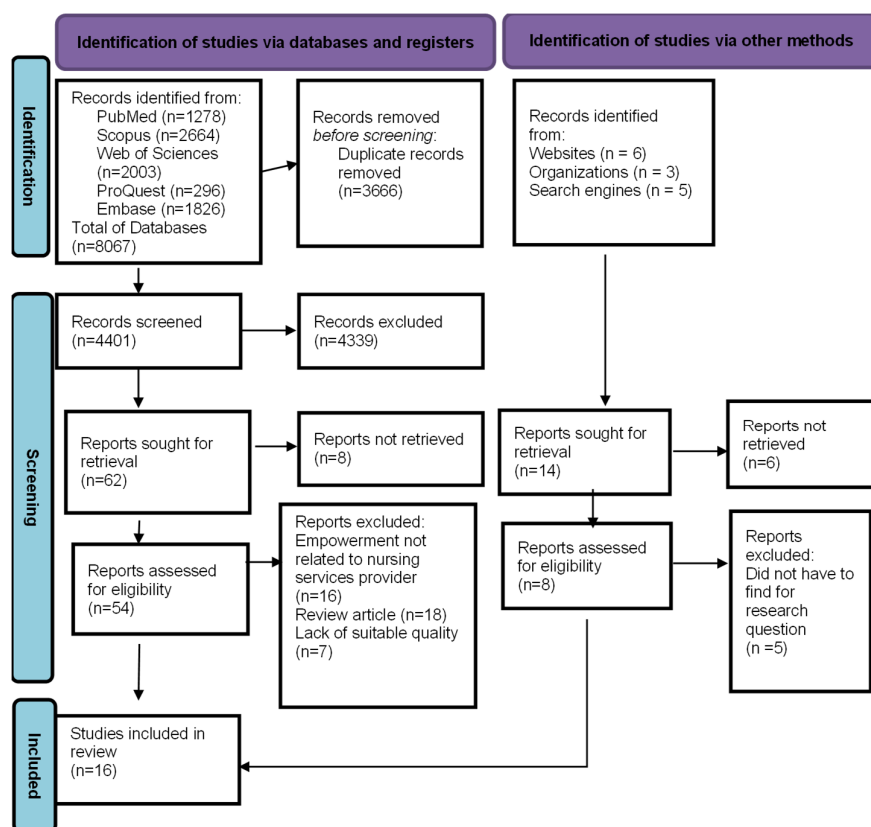


Figure 1. PRISMA flow diagram

Table 3. Characteristics of the Included Studies

No	Title	Author(s)	Year/ Setting	Study method	Study object(s)	Main Results
1	Assessment of disaster preparedness and related impact factors among emergency nurses in tertiary hospitals: descriptive cross-sectional study from Henan Province of China (21)	Jiange Zhang, et al.	2023 China	Cross-sectional	Examining the current status of disaster preparedness and determining related factors among emergency nurses	Blended learning is one of the most effective educational methods in disaster medicine, providing an opportunity to teach broad aspects of knowledge and skills through multiple teaching strategies. Simulation-based training, such as tabletop exercises, exercises, full-scale functional training, and virtual reality simulation exercises, has become a realistic and effective approach to preparing first responders for disaster management, increasing their knowledge and increasing their confidence. It improves their skills.
2	Effects of Empowerment Programs on Nurses' Competence in Disaster Response (22)	Fatemeh Aliakbari, et al.	2023 Iran	Interventional	Determining the effect of empowerment programs on nurses' competence in disaster response	Exercises and periodic training are effective in improving the capabilities of nurses. One of the recommended solutions to increase capability in the response stage is to use employee empowerment programs, which are usually carried out in the form of continuous training.
3	The Effects of Empowerment on Health Care Worker Performance During the COVID-19 Pandemic in Saudi Arabia (23)	Mayda Alrige, et al.	2022 Saudi Arabia	Cross-sectional	Determining empowerment methods that have the most positive impact on employee performance	Two forms of empowerment have a major impact on the performance of healthcare providers: giving authority to change work processes and providing performance-based rewards. Factors such as self-efficacy, organizational commitment, public service motivation, and psychological issues may also influence Health Care Workers' empowerment.
4	Disaster preparedness and core competencies among emergency nurses: A cross-sectional study (24)	Zahra Chegini, et al.	2022 Iran	Cross-sectional	Investigating the core competencies and preparation of emergency department nurses in disasters	-Nurses must have communication skills with disaster survivors and other professionals. -Policymakers and hospital managers should adopt educational programs to improve the knowledge and basic competencies of nurses. - Definitions of nursing duties in nursing laws and regulations should also be updated. Nursing managers should advocate for improved disaster preparedness for all nurses.
5	Core competencies in disaster nursing: competencies for nurses involved in emergency medical teams (25)	ICN	2022 Switzerland	Guideline	Determining the main competencies of nurses to respond to a disaster	Core competencies in disaster nursing are organized into eight domains by the International Council of Nurses: -Preparation and Planning -Incident Management -Safety and Security -Assessment -Recovery -Communication -Safety and Security -Intervention -Law and Ethics

### 1-2: Professional and knowledge-based capabilities

Professional and knowledge-based capabilities from the category were obtained in this systematic review. It is necessary to have specialized skills specific to the nursing field, such as dressing skills, wound management, endotracheal intubation, cardiopulmonary resuscitation, et cetera. It is also necessary to have capabilities in the field of disasters, such as triage, incident command system, familiarity with the management of mass casualties, familiarity with the emergency evacuation of patients, and early warning (22, 28, 33, 36).

### 1-3: Personality and Behavioral Abilities

People who intend to provide nursing services as volunteers must have a certain personality and behavioral abilities. These abilities include physical and mental abilities, creativity and use of new technologies, responsibility, ability to build a team and perform teamwork, and self-control

ability when dealing with difficult situations (23, 25, 26, 28, 34).

## Theme 2-Organizational Elements

### 2-1: Professional and organizational empowerment

The findings of this review showed that in order to empower the provider of nursing services in disasters, in addition to the fact that the volunteer must have certain abilities, the organization also has an undeniable role in this field. The organization can perform various measures in the field of professional empowerment of these people. The use of effective educational methods, such as the use of virtual reality, the use of blended learning, and team-based learning, is effective (29, 30). The use of national and international standards in the management and leadership of the training process, effective and regular practical training programs, and designing standard training programs for trainers by the



Table 3. Characteristics of the Included Studies

No	Title	Author(s)	Year/ Setting	Study method	Study object(s)	Main Results
6	Classification and minimum standards for emergency medical teams (26)	WHO	2021 Switzerland	Guideline	Determining the main competencies of nurses to respond to mass casualty incidents	The main standards of emergency medical teams include the following: -Coordination of teams -Training of teams -Human resources -Administration and organization management -Records and reporting -Support the national/local clinical system and patient referral -Self-sufficiency -Professional licensing and conduct -Team field management and operation -Support a wider public health response
7	Factors Affecting the Disaster Response Competency of Emergency Medical Technicians in South Korea (27)	Dongchoon Uhm	2019 South Korea	Cross-sectional	Investigating factors affecting disaster response competence among emergency medical technicians in South Korea	Having experience participating in disaster training and drills (at least once to twice or more per year) is a significant predictor of increasing disaster response capabilities in emergency medical technicians. Mandatory disaster training can have a major impact on the preparedness of emergency medical technicians.
8	International Nursing: Needs Assessment for Training in Disaster Preparedness for Hospital Nurses A Modified Delphi Study (28)	Jiyoung Noh et al.	2018 South Korea	Qualitative	Determining the need to train disaster nurses and determining appropriate educational components and content	Having the necessary competencies for a disaster nurse is an essential part of disaster management. If there is no disaster training, it is difficult to understand the role and responsibilities of nurses during a disaster.
9	Nurses' disaster preparedness and core competencies in Turkey: a descriptive correlational design (29)	Taskiran G. & Baykal U	2018 Turkey	Cross-sectional	Identifying nurses' perceptions of disaster preparedness and their core competencies	It is important to create national and organizational policies and protocols, and their active implementation Definitions of nursing duties in nursing laws and regulations should be revised, and new rules should be added for nursing training and practice in disaster nursing. International projects should be initiated to solve the global problem of insufficient preparedness of nurses against disasters.
10	Primary health care nurses' competencies in rural disasters caused by floods (30)	Robriane Prosdocimi Menegat, et al.	2018 Brazil	Qualitative	Identifying the competencies of primary health care nurses in response to hydrological disasters in rural areas	Previous disaster response experience and proper training are essential elements in providing a reliable workforce. Management and leadership, communication, teamwork, health care, and psychological care are among the necessary competencies.
11	Factors influencing disaster nursing core competencies of emergency nurses (31)	Hye-Young Park, et al.	2017 South Korea	Cross-sectional	Identifying factors affecting the main competencies of nursing in disasters among emergency nurses	It is useful to hold educational workshops and simulated training on increasing the competence and capability of nurses in disasters. Evaluating and measuring the capabilities and competencies of nurses in disasters requires the creation of standardized tools.

organization is useful. Designing and planning efficient educational opportunities, needs assessment and training design, and improving nurses' skills with group research can also be done through the organization. Finally, after conducting various trainings, evaluating, and getting feedback from the training performance by the organization can play an important role in empowering the volunteers (24, 31, 35).

## 2-2: Organizational Support Packages

With the support it provides to nursing volunteers, the organization motivates and sustains them. These supports can include financial support, psychological support (before, during, and after disasters), spiritual support, and welfare support (5, 22, 30, 31).

## 2-3: Capacity Building

Capacity building is another category that was found in this review. By adopting policies including revising the

Table 3. Characteristics of the Included Studies

No	Title	Author(s)	Year/ Setting	Study method	Study object(s)	Main Results
12	Call to Action: The Case for Advancing Disaster Nursing Education in the United States (32)	Tener Goodwin Veenema, et al.	2017 USA	Qualitative	Achieving a national agenda for the future of disaster nursing education	For all nurses, the most difficult part of a disaster response may be ethical issues and understanding the incident command system. Students should be exposed to experiential disaster education. This can be done through simulations, community disaster exercises, hospital exercises, or tabletop exercises.
13	Hospital Nurses' Competencies in Disaster Situations: A Qualitative Study in the South of Brazil (33)	Sandra M. Marin	2015 Brazil	Qualitative	Identifying the competencies of hospital nurses in disaster situations	Previous experience in responding to disasters and proper training against disasters are essential elements in the ability of forces. Standardizing disaster training and making it available may create a more cohesive and confident workforce. Participation in continuous education is necessary for nurses to maintain up-to-date knowledge.
14	Development of National Standardized All-Hazard Disaster Core Competencies for Acute Care Physicians, Nurses, and EMS Professionals (34)	Carl H. Schultz	2012 USA	Qualitative	Identify core competencies based on knowledge, skills, and attitudes required by specific target audiences (emergency department nurses, emergency physicians, and prehospital emergency medical service personnel)	- Providing educational materials in the form of short-term modules, self-paced approaches, and provided through the web is useful for busy professionals. - Using effective active learning techniques with the target audience's learning style: Paying attention to the audience's learning styles is an essential element of effective education. - Creating an official program to evaluate the learners and the training course - Evaluating the effectiveness of the courses
15	A survey of the practice of nurses' skills in Wenchuan earthquake disaster sites: implications for disaster training (5)	Huahua Yin	2011 China	Cross-sectional	Determination of relevant nursing skills for nurses participating in disaster response medical teams	The core of disaster management training should be mass casualty transportation, crisis management, Hemostasis, wound management, stabilization and transfer, observation and monitoring, triage, infection control, psychological crisis intervention, cardiopulmonary resuscitation, debridement and dressing, and Central venous catheter placement. The training content should be tailored according to the characteristics of disasters and trainees' background knowledge and clinical experiences to prepare them well for disaster emergency management.
16	Public Health Nursing Competencies for Public Health Surge Events (35)	Barbara J. Polivka	2008 USA	Qualitative	Creating a consensus about nursing competencies in the event of disasters.	The implementation of a two-way educational program, including an independent and self-learning module and an interactive training class session in the form of a workshop, is effective in increasing their capabilities. Nurses should be competent in areas such as triage, incident command system, epidemiology, examination and monitoring of patients, and risk communication.

laws and approving new laws in the field of disaster education and aligning the empowerment programs with the strategic goals of the organization, it played a significant role in the preparation of these volunteers. The existence of media communication, the use of new technologies for the implementation and evaluation of education, the use of the educational capacities of related organizations, the improvement of the level of managers' belief in empowerment, the registration of volunteers and the launch of an online system are among the things that are included in this Review (22, 23, 28, 31, 33) (Table 4).

## Discussion

According to the findings of this review, one of the themes obtained is individual elements that play a significant role in empowering nursing service providers during disasters. During disasters, nursing service providers are the most responsive people and may be used in different parts of the incident command system. Therefore, in addition to having special personality traits, these people must also have different capabilities that can play an effective role in different situations. In the section on managerial and leadership abilities, familiarity with the incident command system (22, 27, 28, 32, 34, 35, 37), knowing the principles

Table 4. Dimensions of the empowerment of volunteers providing nursing services during disasters

Theme	Category	Subcategory
Individual elements	Management and leadership abilities (29,27,24,21)	Communication skills
		Data management Resource management Familiarity with planning concepts Operation management Technical capabilities
	Professional and knowledge-based capabilities (36,33,28,22)	General abilities in the field of disasters
		Capabilities in the field of law and ethics
	Personality and behavioral abilities (34,28,26,25,23)	Capabilities in the field of health Creativity and use of technology Responsibility and accountability Team building and teamwork Self-control ability
		Physical and mental abilities
	Professional and organizational empowerment (35,29-32,24)	Using effective and systematic training methods Create a platform for various exercises
		Standardization of disaster education and Participation in continuing education
		Designing and planning efficient educational opportunities
		Monitoring, evaluation, And Getting feedback on the performance of education
Organizational elements	Organizational support packages (31,30,22,5)	Financial support of the organization Psychological support Spiritual support Welfare support
		Adoption of upstream policies
	Capacity Building (22, 23, 28, 31, 33)	Creating communication systems Creating and expanding opportunities and possibilities
		Adoption of operational plans by managers and officials

of planning (22), risk communication management (28, 35, 36), resource management (21, 30, 32), information security (22, 30, 34), knowing the principles of planning (22), getting to know IMS, NRF, and NIMS (34, 38) are among those mentioned.

A capable leader can increase team efficiency in stressful situations through careful planning, proper resource distribution, and coordination among members. The Incident Command System (ICS) plays a key role in improving the coordination and familiarity of volunteer nursing care providers with disaster relief teams. By creating a command structure, clear division of duties, and standardizing communications, this system helps volunteers to act in an organized and rapid manner during disaster situations. Mastering ICS reduces work overlaps, increases collaboration between different departments, and optimizes resource utilization (39).

Additionally, in the section on professional and knowledge-based abilities for nursing service providers in disasters, several abilities and skills have been mentioned

in different articles. Basic and advanced nursing skills are technical competencies that any nursing care provider should be familiar with. The required technical abilities include learning the concepts of basic resuscitation (5, 29), caring for numerous trauma patients (31), performing endotracheal intubation (5, 33), assessing patients' care needs, and wound care (28, 31, 36, 40). Life-saving skills such as cardiopulmonary resuscitation (CPR) and endotracheal intubation are vital for disaster nursing volunteers since, in critical situations, time is the deciding factor in saving patients' lives. Mastering these abilities enables volunteers to respond quickly and efficiently in the event of a cardiopulmonary arrest or acute respiratory failure. In natural disasters or mass occurrences where access to specialized medical facilities is limited, doing CPR and intubation might be the difference between life and death. As a result, constant training and actual application of these abilities equip nursing volunteers to handle emergencies and play a vital role in raising victim survival rates (41).



Moreover, other capabilities that have a more specific and advanced aspect, such as familiarity with the principles of triage (5, 22, 28, 29, 32-35), preparing for CBRN incidents (28, 31, 36), mass casualty management (5, 27, 29, 32, 35), and emergency evacuation (27, 32, 34), are important.

In the field of law and ethics, providers of nursing services during disasters should be competent in issues such as ethical principles and challenges (32, 34), the application of medical ethics principles (34), legal procedures, and accountability (28, 32). Knowing these topics can help disaster responders avoid legal and ethical pitfalls. During disasters, when psychological stress and a shortage of resources can lead to hasty decisions, adhering to these principles eliminates ethical errors and legal ramifications while also strengthening public trust in rescue efforts. Nursing service providers who voluntarily respond to disasters and emergencies must also have capabilities in the fields of public health and safety. Among these abilities, one can know the symptoms of infectious diseases (22, 30, 33), familiarity with the principles of epidemiology (27, 28, 35), decontamination (22, 31, 32), familiarity with the care system (30, 35) and vaccination (21, 30, 35). These volunteers must also have a strong personality and behavioral abilities. Having skills such as the ability to build a team and perform effective teamwork (29, 30, 34) can be helpful in times of disaster response to better advance the team's goals. Moreover, managing emotions (27), having high internal motivation (5, 27, 29, 34), having self-confidence (21, 30), having physical and mental health to work in difficult conditions (5, 21, 24), and having previous experience in response to disasters (21, 22, 27, 29-31, 34) can be effective in empowering these volunteers.

According to the findings of this review, the next effective theme in empowering nursing service providers during disasters is organizational elements. An organization responsible for sending volunteers to areas affected by disasters and emergencies should use effective and systematic training methods to empower volunteers (35). These methods include face-to-face education (21, 29, 34, 35), distance education (21, 27, 32, 34), blended learning (21, 34, 35), virtual reality (21), self-learning and step-by-step approaches (34), short-term training courses (34), and the use of educational posters and brochures (22).

Additionally, organizations need to use different training platforms to empower these people. The volunteers who have received the necessary training before the disaster and who have been empowered in the field of disaster response can be most effective in the disaster scene. The required exercises must first be measured, and different types of exercises should be used based on the conditions of the candidates (5, 28). Various exercises, such as lectures and workshops (22), round-table exercises (21, 29), games (32), functional exercises (21), simulated exercises in a safe environment (21, 28, 31, 32), and periodic full-scale exercises (21, 22, 27, 34), can be held by the organization to empower the volunteers.

The organization can also play an effective role in empowering nursing service providers by standardizing disaster training (30). Using national and international standards

to manage and lead the education process (30), developing and using standard terms (30, 34), designing strategic, mid-term, and short-term plans (34), and providing applications for volunteer engagement in education (34) can all be beneficial. Because many volunteers providing nursing services are employed by various organizations, the emphasis is on short-term and practical training (34) and using effective learning techniques that are appropriate for their learning style (21, 34). Paying attention to the target group's teachings and previous experiences (27) is also very beneficial in empowering them.

Given that many disasters strike unexpectedly and there is no time to assess the capacities of volunteers, it is critical to monitor and evaluate education in a variety of methods. For example, assessing the performance of volunteers in a scenario (34), including disaster nursing content in the official nursing exam (29, 32, 34), quality assessments, and educational validation with the participation of professional organizations involved in disaster response (34), can be effective in empowering them.

During disasters, volunteers arrive on the site without expecting financial support from organizations. However, if some things are observed by the organization, their incentive may rise (31). Providing performance-based awards (23, 31) and having adequate financial resources (23) are powerful motivators. The presence of psychological support before volunteers enter the scene and during the recovery phase can affect their motivation and interest in responding to future disasters (23). The existence of training classes for psychological preparation (34), the support of the organization to improve the working environment (23), and the creation of the necessary incentives for their continuous participation in the process of training and responding to disasters (23) are among the psychological support.

In many cases, volunteers respond to disasters for spiritual reasons (29). As a result, spiritual help from disaster response groups, such as developing volunteers' religious convictions during the planning stage and providing spiritual care during and after the crisis (29), can be useful in empowering volunteers.

Upstream policies might be useful when discussing how to empower nursing care providers. Revision and approval of new laws (23, 29), incorporating nursing education in disasters into students' curricula (21, 29, 32), preventing the elimination or reduction of educational budgets of related organizations (34), developing a strategic attitude and aligning program empowerment with organizational strategic goals (29), and increasing managers' belief in empowerment through training (23) can all be effective.

## Conclusion

This systematic review, which examined 16 studies from different regions of the world, showed that the empowerment of nursing service providers in disasters depends on 2 main components: individual and organizational. Individual components include management and leadership skills, professional and knowledge-based abilities, and personality and behavioral characteristics that are essential for effective performance in crises. Organizational components,

such as systematic training programs, financial and psychological support, and macropolicies, play an important role in improving these capabilities. A vital role in volunteer empowerment can be performed by taking into account their specific circumstances and motivations, as well as developing effective training programs. As a result, volunteers should be found and properly educated. Interested organizations can play an essential role by giving the necessary assistance and developing empowerment courses based on the requirements of the volunteers.

The findings of this study can assist policymakers and health managers in developing targeted programs, improving educational infrastructure, and providing organizational support to further empower these volunteers in the aftermath of disasters. Furthermore, focusing on the particular requirements of volunteers and utilizing current educational approaches such as virtual reality and integrated learning can improve the success of these programs. Finally, this study emphasizes the importance of international cooperation and updating legislative paperwork to increase the preparation of nursing service providers in catastrophes.

### Authors' Contributions

All the authors have contributed to the study design, data collection, data analysis, and manuscript editing.

### Ethical Considerations

Not applicable.

### Acknowledgment

The authors thank Iran University of Medical Sciences.

### Conflict of Interests

The authors declare that they have no competing interests.

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