

Nurse Experiences in Natural Disasters

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Abstract

Disaster nurses are an important part of the health team that is on the scene during disaster events or works in the disaster area after the disaster. Disaster nurses play a role in a wide range of issues including data collection, clinical practices related to the maintenance of vital activities of patients' relatives, triage, patient care, psychological first aid, education, public health problems, reporting, vaccination and determination of health needs in limited resources in the disaster crisis response process. The aim of this study is the compilation of literature information on the experiences of nurses and nurse candidates with natural disasters. In the working method, using Web of Science, Scopus, and PubMed literature search tools, relevant sub-topics until 2025 were evaluated by using keywords related to disaster and nursing experiences.

The evaluation of the experience studies on disaster nursing may guide further research in the field of disaster management in determining

Keywords: Experiences, health, impact, natural disaster, nurses

1. Introduction

Natural disasters are situations that require intervention and decisions in the face of uncertainty, affecting and restricting social life, as they are mostly unpredictable and unexpected [1,2]. The six sub-hazards that trigger the formation of natural disasters are geophysical, hydrological, meteorological, climatic, biological, and extraterrestrial elements [3].

Determining and sharing disaster experiences is an important method of disaster risk reduction [4]. Experiencing disasters facilitates an individual's ability to anticipate and comprehend disaster risks prior to encountering such events. [5] A diverse array of occupational groups encounters exceptional circumstances within disaster-stricken areas. Among those responsible for on-site operations are search and rescue teams, fire brigades, health technicians, medical specialists, nursing professionals, and security organizations [6]. In addition to disaster victims, health professionals working in the disaster area are also directly or indirectly exposed to the negative mental and traumatic effects of the disaster [7,8]. Nurses undertake essential critical responsibilities and provide effective care in areas affected by disasters, aimed at mitigating health risks and addressing life-threatening conditions encountered by victims during the phases of preparedness, response, and recovery in disaster management. [9] . Jennings' Disaster Nursing Management Model has been developed to explain the disaster planning and management responsibilities of nurses. It classifies the processes that nurses should implement with other personnel into four stages

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before and after the disaster, which include assessment, education, planning, case management, training, and application [10]. The responsibilities of nurses to adapted for disaster management cycle regarding disasters are illustrated in Figure 1.

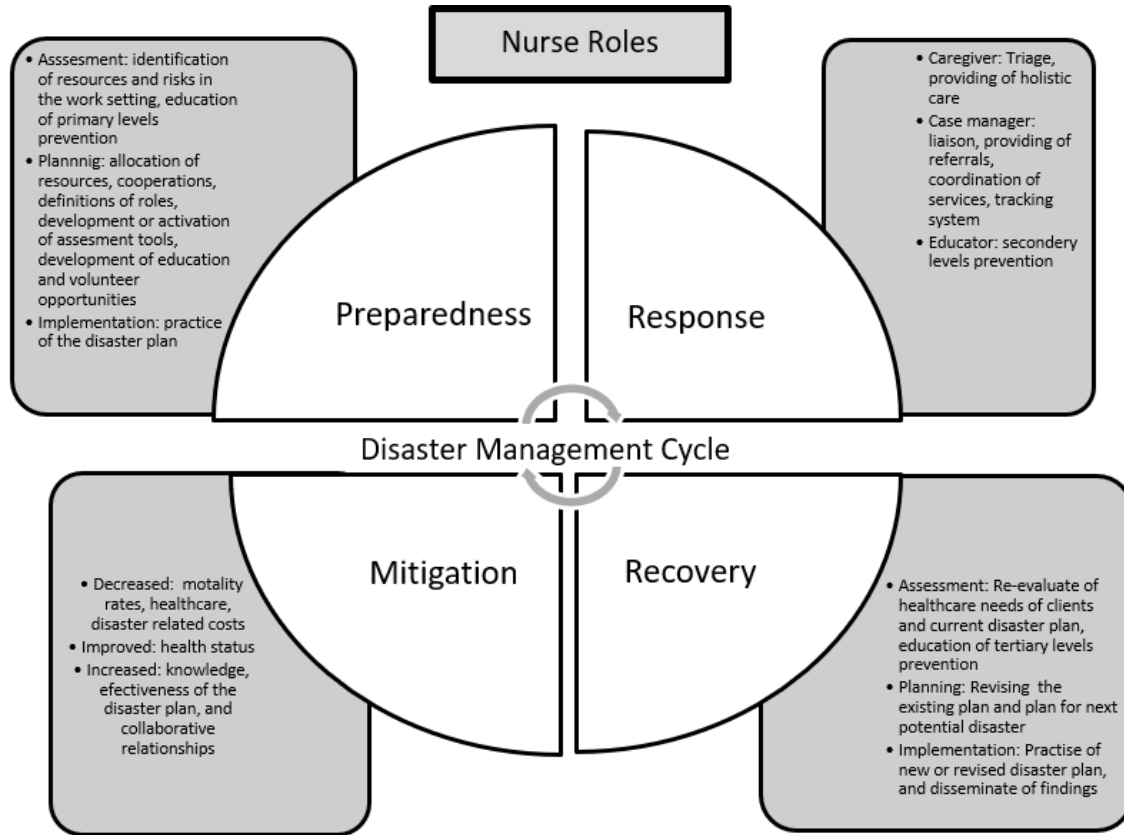
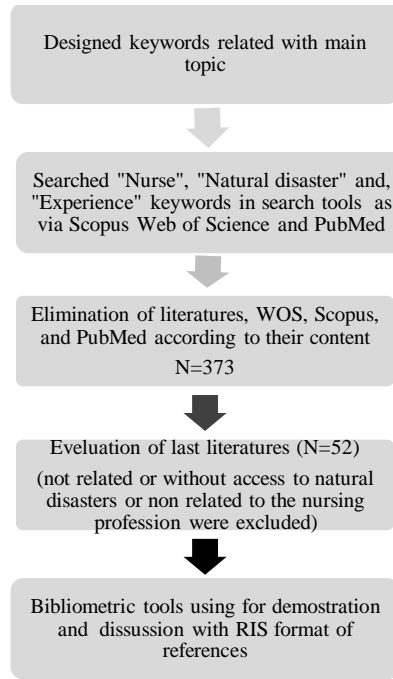


Figure 1. The Role of Nurses Related to Disasters Adapted to Disaster Management Cycle (Revised from Jeninger's Disaster Nursing Management Model [10] and Disaster Management Cycle [11])

2. Materials and Method

This study aimed to investigate the subtopics related to nurses' and nursing student candidates' experiences with natural disasters as revealed through keyword searches conducted in three search engines. Figure 2 summarizes the findings.

The keywords "natural disaster ", "nurse", and "experience" were selected without time limitations, and three distinct databases were independently searched within the Web of Science (WOS), Scopus, and PubMed literature search domains (Table 1).

**Figure2.** The Study Design**Table 1.** Search Strategies In Databases

Database	Search keywords	Articles Found
WOS	natural disaster (Topic) and nurse (Topic) and experience (All Fields) and Article or Review Article (Document Types)	175
SCOPUS	(TITLE-ABS-KEY (nurse) AND TITLE-ABS-KEY (natural AND disaster) AND TITLE-ABS-KEY (experience))	192
PUBMED	Search: ((natural disaster) AND (nurse)) AND (experience) Filters: Free full text, Full text, Clinical Study, Clinical Trial, Meta-Analysis, Review, Systematic Review, English, from 1900/1/1 - 2025/3/1 Sort by: Most Recent	6

A total of 373 references were reviewed. In the context of the study, evaluations did not include research pertaining to natural hazards as well as studies focused on nurses and nursing candidates as 321 references. Ultimately, 52 articles remained for analysis. The criteria for not being accepted into the study are that there is no natural disaster, it is not related to nurses, and conference studies are not included in the study. In the analysis of this compilation study, bibliometric descriptive analysis was preferred. To prevent source conflicts, the Vosviewer program was used in bibliometric evaluation, and the Zotero source editor program was used in compilation. The Zotero 7.0.15

software was utilized to mitigate conflicts among articles, to arrange them systematically, and to convert various source files into the RIS format.[12] . After the articles were selected, visualization was provided in the Vosviewer program in RIS format. Vosviewer is one of the most commonly utilized tools for compiling and analyzing text-based data [13]. In this study, the program was favored for its effectiveness in visualizing the related subjects of articles acquired from various sources based on specific keywords.

3. Results

Subjects concerning nursing experiences during natural disasters were merged into two items (yellow and orange). The first part covers nurses (as yellow colour), post-traumatic disorders, mental health after natural disasters, and preparation processes before natural disasters. The subsequent section encompasses qualitative research focused on disaster nurses, their caregiving practices, and the training of nurses in response (as orange colour) to earthquakes, natural disasters, or the COVID-19 pandemic (Figure 3).

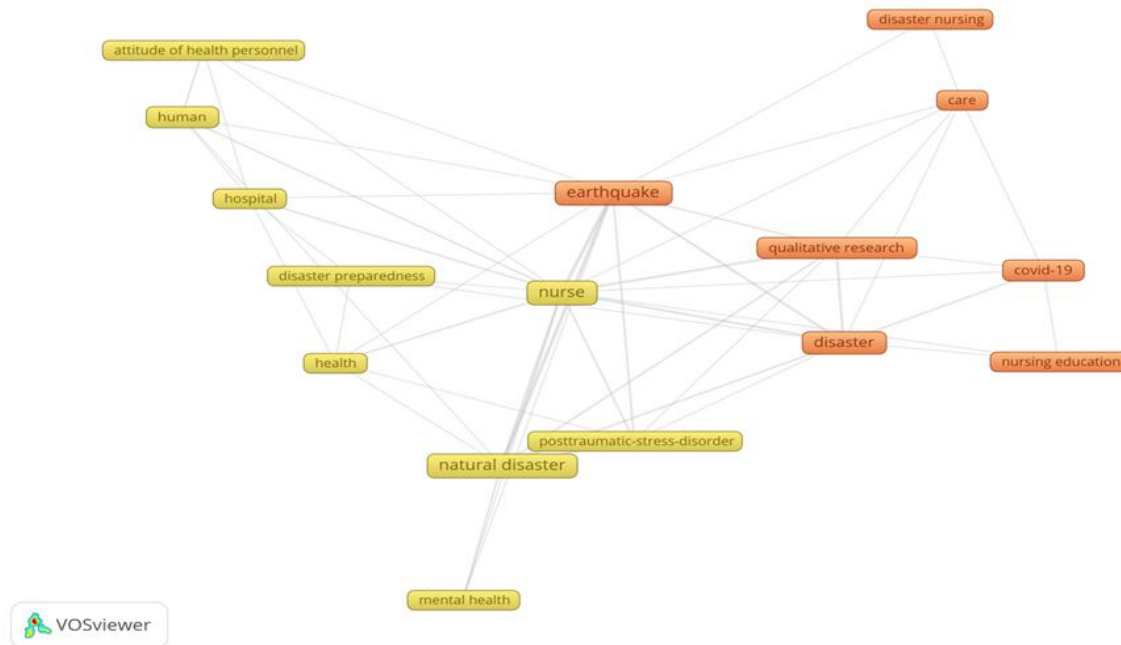


Figure 3. Relation Dimensions of Nursing Experiences

Table 2 presents 13 examples from various aspects of the 52 articles assessed. The examples examined span the literature time frame from 1990 to 2025. The table succinctly outlines the time period, the type of article considered, the tools analyzed, the themes discussed, and the conclusions or recommendations summarized by the authors in their respective articles.

Table 2. Some Sample of Literatures about Nursing Experiences about Natural Disasters

Years	Research Methods	Related, (N)	Themes	Conclusions/Suggestions	References
2025	Original paper	Nursing students, N=17	Disaster, Earthquake Qualitative research	The experiences of nursing students impacted by earthquakes underscore the significance of disaster preparedness and the necessity of addressing emotional needs. Specific lessons and discussions of case studies pertaining to disasters are highlighted, emphasizing the importance of training nurses who are thoroughly equipped to respond effectively in such situations.	[14]
2025	Original paper	Nursing students/Disaster nursing, N=62	Disaster Disaster preparedness Disaster nursing, Nursing education	As the disaster literacy levels among students increase, the preparedness levels of nurses also rise. Implementing periodic mandatory practice and training programs in this domain is beneficial for enhancing the disaster literacy of the students, a compulsory disaster nursing course into all standard nursing curricula is essential, to establish educational policies in disaster nursing education within Turkey, and to enhance skills required for the response phase before disaster events and simulate the necessary actions, applying simulation-based disaster drills.	[15]
2025	Original paper	Nurses, N=16	Natural disaster Earthquake Nurse Mental health Post-traumatic stress disorder Qualitative research	The traumatic life experiences of nurses who voluntarily participated in relief efforts following the earthquake on February 6, 2023, include shocking facts (environment: "Apocalypse", sounds from rubble, identification and management of corpses, maternal and infant mortality); coping methods (suppression of emotions, social support systems, and spirituality); traumatic stress responses (physical, behavioral, cognitive, emotional stress responses); and traumatic growth (priorities and perspectives, personal characteristics, relationships with others, professional values, level of satisfaction, and awareness and preparedness for disasters).	[16]
2024	Original paper	Nurses, N=384	Natural disaster Earthquake preparedness Nurse Hospital	Nurses' perceptions of their basic competencies against disasters are low. They have different levels of basic competencies against disasters, there are gaps that need to be filled in nurses' core competencies in handling disasters, the importance of increasing age and professional experience, Health policymakers and planners should pay more attention to perceived core disaster competencies for all nurses, organize and provide continuing education courses, Working groups and nurse managers should be formed to use the high skills and capacities of nurses at all levels of disaster risk management. The hospital should be prepared for disasters.	[17]

Table 2. Some Sample of Literatures about Nursing Experiences about Natural Disasters (Continued)

Years	Research Methods	Related, (N)	Themes	Conclusions/Suggestions	References
2024	Review	Databases of Medline	Natural disaster, Earthquake Nurse Care Health Nursing education	The best nursing care practices in earthquakes require high clinical skills, special training, that these practices can save lives and/or reduce the harm to victims, that various management and coordination practices led by nurses provide adequate care to victims in sufficient time, and that earthquake rescue practices should be developed together with communities.	[18]
2024	Original paper	Nurse, N=87244	Natural Disaster Nurse Disaster preparedness	Nurses are the largest group of health professionals in disaster response. Their self-efficacy is influenced by factors such as age, nursing title, emergency department experience, and disaster knowledge. Special training programs can enhance self-efficacy and capabilities. Future research should examine nursing competencies in disaster response to improve overall capacity.	[19]
2022	Original paper	Nurse, N=11	Disaster Nurse COVID-19 Qualitative study Care Hospital	Nurses identify administrative issues impacting care, aware that experiences can lead to security risks. Due to their understanding of best practices and rapid response to new situations, they have become central to health system design.	[20]
2020	Quantitative Meta-Synthesis	PubMed; CINAHL; Cochrane Library; Eric; PsycINFO; Scopus; and Academic Search Premier	Natural disaster Disaster nursing Nurse	Ongoing psychological support may be delivered in conjunction with recovery efforts and long-term assistance in response to disasters. Nurses can enhance communication regarding disasters when equipped with effective management strategies and support systems, facilitating local communication to identify sustainable care centers in real-time. Solutions should be implemented to ensure comprehensive emergency assistance, incorporating constructive frameworks to establish resilient themes during disasters. It is advisable to place significant emphasis on thoroughly consulting the perspectives of officials and acknowledging the vital role they play during rescue operations.	[21]
2019	Original paper	Nursing Master students, N=7	Disaster Nursing student Qualitative study	Research highlights that student anxiety, a challenging work environment, varied roles, and inadequate disaster preparedness affect nursing students' disaster response experiences in Indonesia. Early initiation of nursing education and inclusion of mental health training in nursing schools are crucial.	[22]

Table 2. Some Sample of Literatures about Nursing Experiences about Natural Disasters (Continued)					
Years	Research Methods	Related, (N)	Themes	Conclusions/Suggestions	References
2017	Review		Natural Disaster, Disaster Nursing	Nurse leaders must apply their unique skills in all phases of disaster management during public health emergencies. They need to be ready for rapidly changing care standards and operational dysfunction in various settings during disasters.	[23]
2010	Original paper	Nurse, N=ND	Natural Disaster Nursing education Nursing Care	Characteristics of a systematic educational approach to responding to natural and man-made disasters require the inclusion of disaster courses and topics in undergraduate and graduate programs, along with regular updates to disaster certification through continuing education. Officials likely to be involved in disaster relief, such as those in perioperative care, emergency care, community care, and public health, should have advanced knowledge and skills in disaster relief.	[24]
2008	Feature Article		Natural Disaster, Nursing Care	During a disaster, no hospital should be isolated. A communication plan for parents of hospitalized babies, including backups like satellite phones and text messaging, is essential. Neonatal hospitals must advocate for their patients' needs in such situations. Neonatal care, in partnership with local and government bodies, plays a crucial role in short-term survival. Although disasters are unavoidable, to be able to prevent the healthcare crisis that follows with proper nutrition and education.	[25]
1990	Original paper	Nurse student, N=61	Natural disaster Disaster Mental health human Post traumatic stress disorder	They were confused, irritable, lethargic, and withdrawn, a normal human response to the specific trauma of disaster stress; they focused on survival, talked about the event, and used humor, religion, altruism, and crying to cope. Behaviors such as crying can be viewed as both a response and a coping mechanism. Students found this disaster relief effort to be both personally rewarding and professionally enriching; it sharpened their judgment skills, enhanced critical thinking, and encouraged determined, goal-oriented action.	[26]

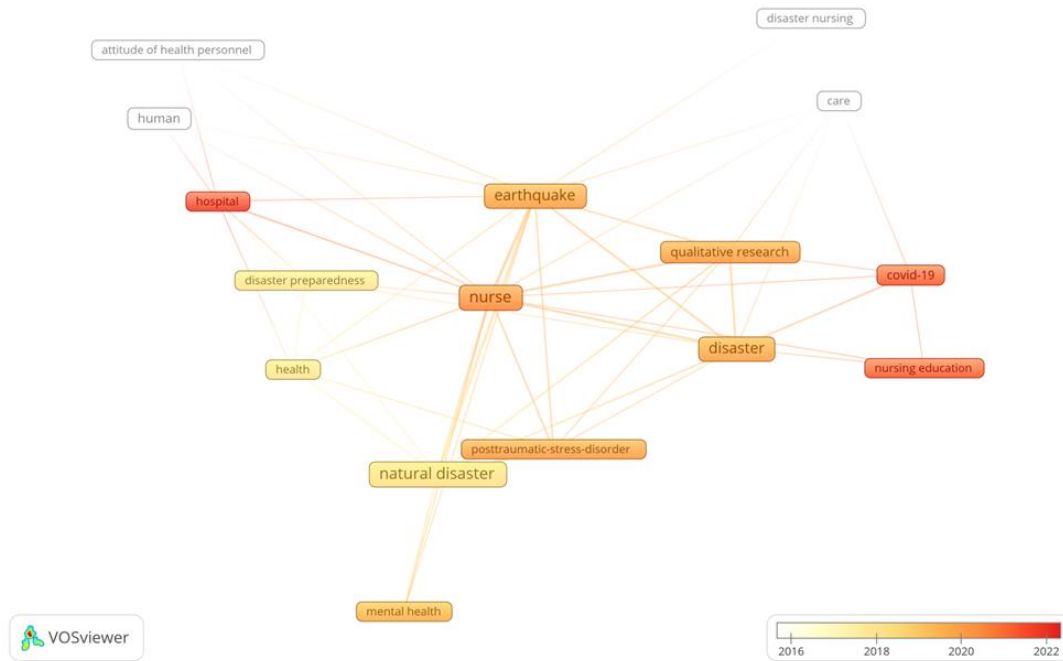
ND: Non determined

Upon selecting the fifteen most frequently utilized words in the abstract sections of the study, it became apparent that the terms " nurse, " " disaster, " " experience, " " study, " research, " earthquake, " and "COVID" were prominently featured in the accompanying Table 3.

Table 3. Most 15 Words in Abstracts

id	Term	Occurrences
1	COVID	15
2	data	12
3	disaster	47
4	earthquake	26
5	education	15
6	experience	40
7	interview	12
8	japan	9
9	natural disaster	25
10	nurse	74
11	older person	8
12	participant	9
13	research	17
14	study	56
15	theme	12

From a temporal perspective, it has been observed that before 2016, studies encompassed disaster nursing, care, the attitudes of health personnel, and human-themed research. In contrast, after 2028, the focus shifted to themes such as earthquakes, nursing, post-traumatic stress disorder, and qualitative research. Furthermore, recent studies regarding disaster and nursing experiences have concentrated on subjects including hospitals, COVID-19, and nursing education (Figure 4).

**Figure 4.** Time Dependent Item Display

Research related to nurses and natural disasters primarily focuses on earthquakes and qualitative aspects methodology (Figure 5).

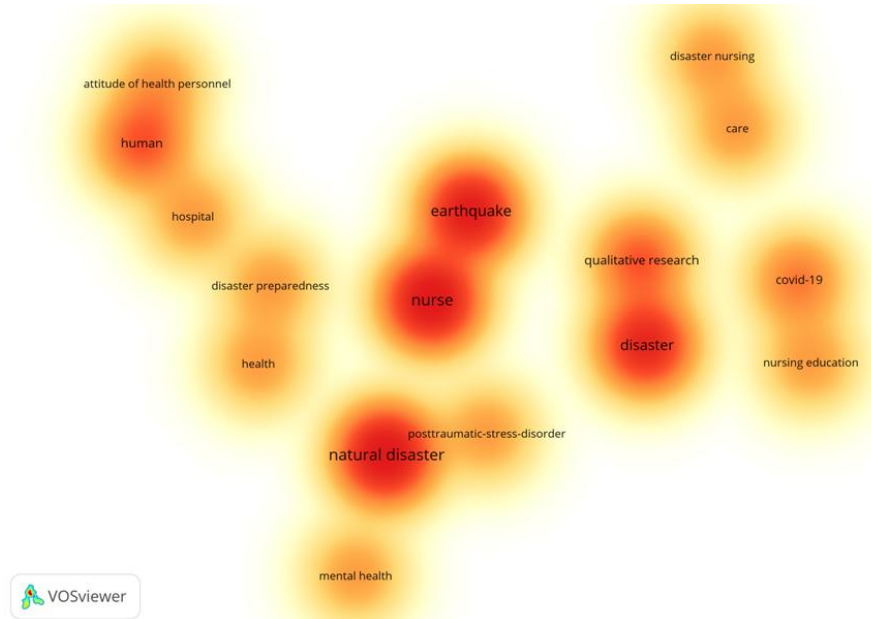


Figure 5. Density of Nursing Experiences of Natural Disasters

4. Discussion

This study explored nurses' experiences with natural disasters, including their learned lessons, roles, and encountered procedures. Nurses carry out various duties across several sub-phases of disaster management [10]. Nurses in disaster triage assess the event's severity, identify health needs, set priorities, detect public health issues early, estimate required resources, collaborate with professionals and organizations, maintain command chains, ensure communication, provide emotional support, assist with safe drinking water, support daily living activities for injured patients, administer vaccinations and medications, distribute relief materials, compile reports, document disease details, liaison with authorities, cooperate with organizations, practice self-care, monitor emerging diseases, care for infants and pregnant women, educate those in need, and counsel psychologically affected individuals [27]. Considering the focus on educators and leaders, training and studies are recommended to increase nurses' managerial leadership skills in this direction [23].

Previous studies primarily focused on the psychological effects of the process and the elements that required arrangement for training or preparation within the workflow [24–26,28]. The need for motivation-enhancing activities to appreciate the efforts of nurses in disasters has come to the fore during COVID-19 [20]. Additionally, it is emphasized that intensive work shifts are necessary during the pandemic, along with coordinated planning and preparation for nurses facing disasters like pandemic infection risks [20,29]. Most of the recent studies on nurses are focused on studies

on COVID-19 and others on earthquakes.

In recent years, the focus has been on how the application and improvement features of research subjects can be further developed [19–21]. Research suggests that nurses' experiences during disasters enhance their professional skills. Similar to other professions, nurses or candidates can also be adversely impacted psychologically by natural disasters [22,30].

Recent studies predominantly possess qualitative studies, suggesting few quantitative measurement instruments available for evaluating the impact of disasters. The most commonly observed scales related to nurses' disaster experiences were disaster perception and self-efficacy [15,17,19,29,31–33]. This indicates a necessity for more versatile and quantitative assessment and measurement tools that are appropriate for evaluating the disaster process from the perspective of personnel involved in natural disasters and extraordinary conditions.

Conclusions

Studies in the literature primarily focus on natural disasters and nursing experiences, including self-efficacy, effective intervention, enhancing communication with disaster victims, administrative nurses' leadership knowledge, and the experiences and perceptions of nurse candidates during disasters. The importance of simulated disaster nursing and disaster nurse leadership training is emphasized, as the age-related intervention experiences of nurses in disasters increase, leading to improved intervention skills and success. Nurses are a vital group of health professionals directly involved in critical processes for disaster victims. Therefore, we believe it would be beneficial to enhance applied education methods and research that refine the standards of nurse experiences in natural disasters, improve self-efficacy and intervention experiences, and broaden disaster-related expertise.

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