



Review

Basic Competencies of Disaster Nurses: A Scoping Review

Alfien Yoesra ^{1*}, Cipto Susilo ²

¹ Emergency Nursing Department, Universitas Muhammadiyah Jember, Est Java, Indonesia; alfienyoesra@unmuhjember.ac.id

² Emergency Nursing Department, Universitas Muhammadiyah Jember, Est Java, Indonesia; cipto.susilo@unmuhjember.ac.id

* Correspondence: alfienyoesra@unmuhjember.ac.id

Abstract: Disaster is an event that harms various aspects such as physical, economic and infrastructure. Emergency nurses have an important role in disaster management in the mitigation, preparedness, response and rehabilitation phases. Nurses involved in the disaster management process, especially in the response phase, must have specific skills in handling mass casualties in a disaster emergency. The purpose of writing this article is to find out what basic competencies must be possessed by nurses as a team in a disaster. The method in writing this article uses a scoping review consisting of; 1) deter-mining research questions, 2) searching for relevant articles, 3) selecting ar-ticles included in the review process, 4) mapping data, 5) compiling, summa-rizing and reporting results. Analysis of research data using thematic anal-ySES. The results of the study found four themes, namely; 1) one-command nurse communication in a disaster area, 2) nurse preparedness before and af-ter a disaster, 3) nurses' sensitivity to ethics and culture in dealing with dis-aster victims, 4) having skills in disaster triage, basic first aid and basic life support for victims on disaster.

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1. Introduction

Disaster is an event that harms various social aspects and functions. An event is said to be a disaster if the resources owned by an affected region cannot cope with the event independently. Disasters are events that endanger and disrupt people's lives, which are caused naturally or artificially, causing loss of life, environmental damage, loss of property and psychological impacts [1]. The trend of disaster events after the COVID-19 pandemic in the world is climate change. Climate change, namely the heat wave in the South and West of the United States experiencing severe drought which was later declared the most expensive event in 2023 in the country with estimated losses of US\$14.5 billion. The Lahaina wildfire on the island of Maui, Hawaii, was named one of the 10 most expensive disasters in August with economic losses of US\$5.5 billion. In terms of drought-related events, around 18.8 million people in Indonesia were negatively impacted by the dry season that lasted from May to October 2023. The Emergency Events Data-bases (EM-DAT) identified a total of 399 natural disasters in 2023. These incidents affected 93.1 million people and caused 86,473 fatalities. Total economic losses reached \$202.7 billion USD [2].

Emergency nurses have two main functions, namely the traditional role like nurses in general in hospital emergency rooms (IGD, ICU, triage area) and a unique role, one of which is disaster nursing. As a disaster nurse, nurses can carry out pre-disaster, intra-disaster and post-disaster management. Nurses can help overcome problems experienced by the community. In terms of disaster preparedness, commu-nity resilience or the ability of the community to protect or respond effectively to disasters is becoming increasingly important, especially in areas with limited re-sources [3]. In times of disaster, nurses use their spe-cialized knowledge, skills, and abilities to reduce potential risks to the health

and lives of victims. Skills such as the ability to prioritize victims, understand emergency response plans, be trained in the proper use of emergency response tools and personal protective equipment (PPE), follow communication routes and channels, and be trained in evacuation are required [4].

As an essential member of the health care team in all phases of disaster management, nurses can play a vital role in reducing risk, dealing with disaster victims, counseling, and research. This is done by preventing harm and minimizing damage, as well as increasing preparedness, responding quickly, facilitating recovery. Nurses' involvement and active involvement in disaster risk management is indeed needed in all cycles of disaster management with various types of disasters [5]. In Indonesia, a study stated that nurses involved in the disaster team when a disaster occurred, out of a total of 97 people, 82 people (84.5%) had never attended disaster training, while only 15 people (15.5%) had attended disaster training from the total number of respondents [6].

The role of nurses who are expected to be able to take action in pre-disaster, intra-disaster and post-disaster makes nurses need specific skills in disaster management. The ability to reduce disaster risks, handle victims and carry out rehabilitation in various types of very complex disasters should require nurses to have special competencies related to disasters. The phenomenon that occurs in Indonesia related to disaster volunteers who come from nursing staff, many of whom have not received disaster training. [6] Experience in participating in disaster training has proven to have an influence on the disaster management process by nurses who are involved as disaster volunteers. So the author is interested in conducting a literature study related to the basic competencies that disaster nurses must have.

2. Materials and Methods

This article is written using the scoping review technique. Scoping review is a literature study used to synthesize a new concept that is quite broad in scope. The steps used in writing a scoping review are as follows [7]:

Step 1: define the research question

The research question in this study is what are the basic competencies that nurses must have as a team in a disaster.

Step 2: search for relevant studies

In searching for relevant articles, the author used several search engines such as: Science Direct, PUBMED, Proquest, Emerald, EBSCO, JSTOR. In searching for articles, the author used the search keywords "disaster nurse AND basic competencies". The articles used are open access literature, 2021-2024 and are research articles or articles resulting from literature reviews. Several inclusion and exclusion criteria in taking articles are as follows:

Table 1. Inclusion and exclusion criteria

Participants/Respondents	Inclusion	Exclusion
	Nurse	Besides nurses
Context	Knowledge and skills	In addition to disaster-related knowledge and skills
Area/Concept	Natural and non-natural disasters	Apart from natural and non-natural disasters
Type of Study	Original research and literature review	Books, news, reports, conferences
Language	English and Indonesian	Besides English and Indonesian

Step 3: selecting studies to be included in the review

2077 articles were found in the search using the database in step 2 in figure 1. 51 articles were excluded because there were similarities in title and content. 1879 articles were excluded after abstract review and did not match the research objectives. 148 articles were excluded because they did not meet the research inclusion criteria. There were 5 articles that met the research objectives and inclusion criteria.

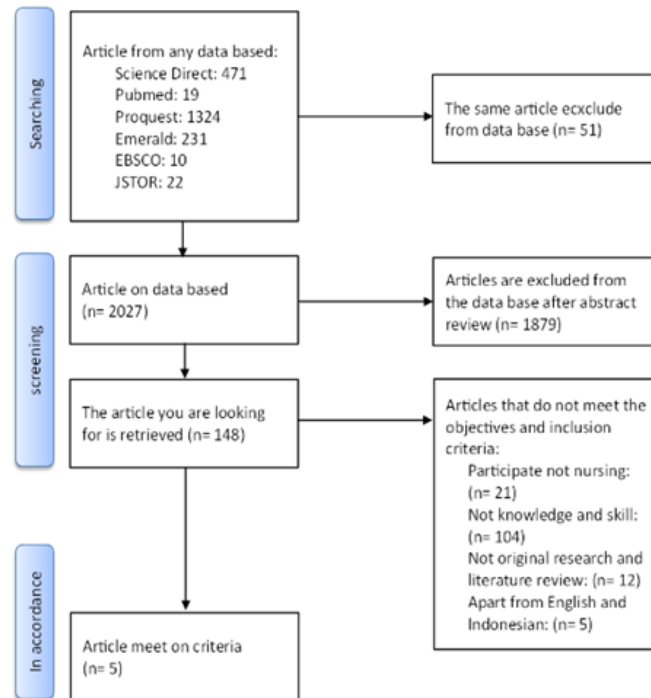


Figure 1. Searching and screening article

Step 4: mapping the data

Data mapping of articles in this study is related to: 1) authors, 2) titles, 3) objectives, 4) research design/type of article review, 5) participants/respondents, 6) results. The results of data mapping are then discussed in the research results.

Step 5: compile, summarize and report the results

The 5th step in writing this research is to compile the results of the article review by summarizing the results of all the articles that were reviewed. The theme of the results of the article review was analyzed using thematic analysis. Thematic analysis is usually used in processing qualitative research data. In thematic analysis, coding of research data and determination of themes are carried out afterwards. After determining the theme, reporting on the findings of the research results is carried out [8]. In this article, the keywords are the results of previous research so that analyzing the data in Table 2 and coming up with a new theme does not result in giving rise to a new concept. The steps for thematic analysis are as follows:

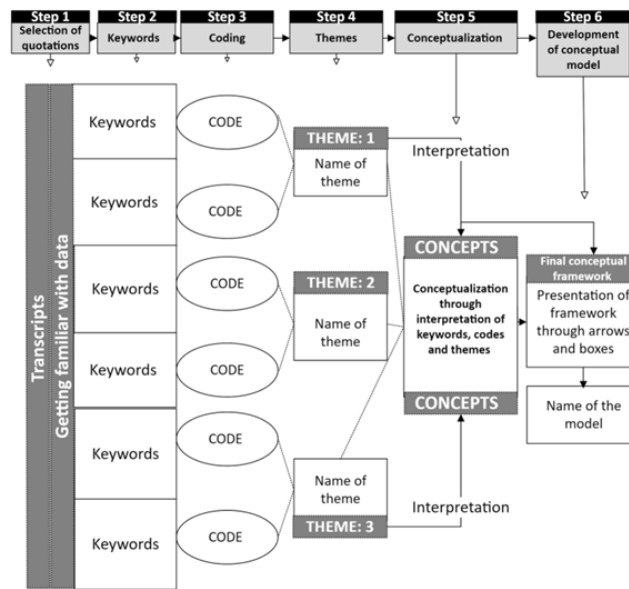


Figure 2. Steps of Thematic Analyse

3. Results and Discussion

Five (5) articles that meet the objectives and inclusion criteria in this study and will be reviewed are articles published in 2021 (n= 2), 2022 (n= 1) and 2024 (n= 2). All articles that meet the criteria were published between 2021-2024. The article explains the basic competencies that nurses must have in disasters. Review 5 articles that meet the following criteria:

Table 2. Mapping Data Articles

No	Author	Topic	Aim	Research Design/ Type of Article Review	Responden/d ata based	Result
1	[9]	Nurses' core disaster-response competencies for combating COVID-19—A cross-sectional study	To explore how registered nurses perceive the core competencies entailed in disaster nursing, their role in disaster management, and the	Cross sectional study	118 registered nurses from different clinical settings in Slovenia	<ol style="list-style-type: none"> 1. Competencies for disaster management 2. Nurses preparednes disaster management

No	Author	Topic	Aim	Research Design/ Type of Article Review	Responden/d ata based	Result
			potential barriers with a view to developing disaster nursing in Slovenia			
2	[10]	Disaster preparedness and core competencies among emergency nurses: A cross-sectional study	To evaluate the levels of disaster core competencies and preparedness of nurses in the emergency department	Cross sectional study	271 nurses in the emergency departments of six hospitals in Qazvin, Iran	<ol style="list-style-type: none"> 1. Technical skill nursing needed for preparedness nursing on disaster 2. Communication skill for nursing in disaster
3	[11]	Nursing skills required across natural and man-made disasters : A scoping review	To map the nursing skills required for different types of disasters	Scoping review	CINAHL, Cochrane, Embase, MEDLINE, PsycINFO, PubMed, Web of Science, CNKI and Ichushi-Web	<p>In natural and man-made disaster, professional nurses needed skills:</p> <ol style="list-style-type: none"> 1. Casualty triage 2. Observation and monitoring 3. Basic first aid techniques 4. Psychological care 5. Communication skills
4	[12]	General nurse competencies in	To understand the significance	An exploratory, cross-	The study group consisted of technical-	<ol style="list-style-type: none"> 1. Preparation and planning (with other discipline)

No	Author	Topic	Aim	Research Design/ Type of Article Review	Respondent/data based	Result
		disaster: A delphi study	ence of a disaster-related competence framework for Portuguese general nurses and identify from ICN	sectional qualitative study	scientific council's presidents or coordinators/directors of nursing courses, nurses integrated in the Portuguese Council of Nurses and National Nursing Specialty Colleges and nurses with experience in the field of disasters.	<ol style="list-style-type: none"> 2. Communication (communicates disaster-related information priority) 3. Incident management (disaster plan including chain of command) 4. Safety and security (for self and others) 5. Assessment (reports symptoms or events that might indicate the onset of an emergency in assigned patients/families/communities) 6. Interventions (basic first aid) 7. Law and ethics (ethical practice during disaster response that is based on utilitarian principles)
5	[13]	The core competencies in disaster nursing of new graduate nurses in Guangdong, China: A cross-	To assess the level of core competencies in disaster nursing of New Graduate Nurses (NGNs) and explore	Cross-sectional design	607 new graduate nurses participated	<ol style="list-style-type: none"> 1. Intervention (Caring for corpses in mass quantities in accordance with religious regulations, mass immunization) 2. Preparation and planning, recovery (multidisciplinary work group, maintain or resume)

No	Author	Topic	Aim	Research Design/ Type of Article Review	Responden/d ata based	Result
		sectional study	its influencing factors.			functioning during and post event)

Thematic analysis was carried out on the 5 (five) research results found to determine new themes. The results of the thematic analysis are as follows:

Table 3. Thematical Analyse

Keyword (bold)	Code	Theme
Commucation skill for nursing in disaster (article 2) Communication skill (article 3) Communication (communicates disaster-related information priority) (article 4)	Communications Nurse	One-command nurse communication in a disaster area
Incident management (disaster plan including chain of command) (article 4)	One Command	
Technical skill nursing needed for preparedness nursing on disaster (article 2) Nurses preparednes disaster management (article 1) Preparation and planning (with other discipline) (article 4) Preparation and planning , recovery (multidiciplionary work group, maintain or resume functioning during and post event) (article 5)	Preparedness	Nurse preparedness before and after a disaster
Intervention (Caring for corpses in mass quantities in accordance with religious regulations , mass immunization) (article 5) Law and ethics (ethical practice during disaster response that is based on utilitarian principles) (article 4)	Ethic and law	Nurses' sensitivity to ethics and culture in dealing with disaster victims

Keyword (bold)	Code	Theme
Safety and security (for self and others), assessment (reports symptoms or events that might indicate the onset of an emergency in assigned patients / families / communities), interventions (basic first aid) (article 4)	Assesment and interventions nursing	Nurse must have skills in disaster triage, basic first aid and basic life support for victims on disaster
Casualty triage, observation and monitoring, basic first aid techniques, psychological care (article 3)	First aid interventions	

3.1. One-command nurse communication in a disaster area

In disaster management, such as when Covid-19 occurred, having a command structure can make it easier for team members to carry out their duties [14]. Nurses can activate the organization's emergency operations plan (emergency team) and participate in the incident command system, providing leadership and crisis communications. In disaster conditions, nurses as a team of helpers or volunteers are very vulnerable to threats to their health [15]. The lack of skills and competencies of nurses during disasters is more related to reporting methods and access to information, incident command system, knowledge about epidemiological and biological factors, communication, and teamwork [5]. It is necessary for every nurse who is a volunteer member in a disaster or as a relief team from a government or private organization to have one command communication capability. The latest information and changes in information in a disaster event are important because it will influence emergency response and decision making, so nurses must be able to communicate with one command system with other teams in the event of a disaster.

3.2. Nurse preparedness before and after a disaster

Preparedness is built by five domains, namely; 1) preparedness attitude, 2) subjective norms, 3) behavioral control, 4) community participation, 5) community agency trust [16]. Nurse preparedness can be measured using the following eight dimensions: triage and basic first aid; detection; accessing critical resources and reporting; the incident command system (ICS); isolation, quarantine, and decontamination; psychological issues; epidemiology and clinical decision-making; and communication and connectivity [17]. To improve disaster preparedness, nurses need to develop better education and training programs to strengthen nurses' knowledge and skills [18]. To realize nurses' preparedness in disasters which is reflected in planning, structure and survival, they must be included in all disaster management processes. In the international council of nurses in domain 1, it is stated that nurses' preparedness must be reflected not only when a disaster occurs but also before a disaster occurs to form preparedness [19].

3.3. Nurses' sensitivity to ethics and culture in dealing with disaster victims

Ethical and social challenges manifest in the context of epidemics and natural disasters; 1) the relationship between respectful treatment of the dead and the well-being of the living, 2) the dilemmas arising in using mass burials and cremation for fear of infection or in managing a large number of fatalities, 3) the importance of identification of victims and 'finding closure' for grieving families, 4) the tension that arises between introducing public health measures to manage the crisis and following cultural and religious

obligations towards the dead, 5) inequality in caring for the dead [20]. In disasters, nurses are expected to be culturally sensitive and help the survivors regardless of their various cultural backgrounds. In disaster situations, nurses must quickly familiarise themselves with the cultural background of the disaster-affected people and provide them with culturally appropriate care in resource shortages and emergencies. Therefore, cultural competence is necessary for nurses working in disaster situations [21]. To build community resilience in disaster conditions, nurses need to pay attention to several factors such as regional cultural differences, ethical issues and unmet challenges in the disaster relief [22].

3.4. Have skills in disaster triage, basic first aid and basic life support for victims on disaster

For effective disaster response, public health nurses must have the capacity to cope with the first responding duty. For that reason, there should be a prime need to educate nurses about their necessary working procedures in a disaster scenario. Studies show that a few disaster preparedness and management courses have been proposed in Western and Australian nursing schools to prepare nurses for health emergency and disaster management [23]. In order to assist the victims in the emergency phase during disaster, basic skills are required, such as providing early warning, first aid, triage, logistics and communication, search and rescue, and team organization [24]. Emergency nurses must have the proper knowledge, skills, and personal preparedness for disasters to optimize the response to an emergency. New plans are needed to develop continuous disaster education programs to meet emergency nurses' needs regarding preparation and response to disasters. The educational program for improve skill nurse emergency for disaster include: disaster preparedness, simple triage and rapid treatment (START) triage, decontamination procedure, basic life-support and cardio-pulmonary resuscitation, advance trauma support and psychology of disaster [25].

4. Conclusions

Disaster nurses involved in private disaster volunteer communities or members of government disaster organizations in improving the quality of actions given to disaster victims must have basic competencies consisting of: 1) one-command nurse communication in a disaster area, 2) nurses who are included in disaster volunteers must always be prepared before and after a disaster occurs, 3) nurses must be sensitive to the ethics and culture of victims experiencing disasters, 4) nurses must have the ability to disaster triage, first aid and basic life support measures for disaster victims. All themes found are also included in the core competencies of disaster nurses in the ICN. It is recommended that all nurses involved in the emergency response team have these skills.

5. Patents

This section is not mandatory but may be added if there are patents resulting from the work reported in this manuscript.

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