

## PERCEPTIONS ON NURSES' PREPAREDNESS FOR FLOODING DISASTERS: A QUALITATIVE STUDY

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### ARTICLE INFO

#### Article history

Submitted : 2024-2-27

Revised : 2024-3-25

Accepted : 2024-3-30

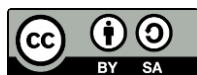
#### Keywords:

Preparedness;  
Nurse ;  
Disaster;  
Qualitative

#### Kata Kunci:

Kesiapsiagaan;  
Perawat;  
Bencana;  
Kualitatif

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### ABSTRACT

Preparedness is a series of activities carried out to anticipate disasters through organization and through appropriate and effective measures with the expected result being a significant reduction in the risk and losses caused by disasters. This study aims to explore nurses' perceptions regarding readiness to respond to disasters, nurses' preparedness in facing disasters, the role of nurses in disasters, obstacles and support in providing disaster nursing services. A descriptive qualitative approach was used in this study. Purposive sampling was used to select 10 nurses for focus group discussions and four nurses for in-depth interviews. Data were collected from January to February 2024 and analyzed using content analysis. Readiness to respond to disasters includes two subcategories: disaster experience and reasons to immediately respond to disasters. Health workers' preparedness in facing disasters consists of four subcategories: early warning, collaboration, resources, development of specific training. The role of health workers in disasters consists of two subcategories: preparedness stage and response stage. In addition, obstacles and support in providing disaster services consist of two subcategories: obstacles experienced and support needed in providing nursing services when a disaster occurs. The findings of this study can serve as a basis for developing disaster preparedness enhancement programs for nurses and other health professionals. The results of the study can also be used as important evidence to encourage disaster health service policies in an effort to reduce risks caused by disasters with the involvement of stakeholders.

### ABSTRAK

Kesiapsiagaan merupakan serangkaian kegiatan yang dilakukan untuk mengantisipasi bencana melalui pengorganisasian serta melalui langkah yang tepat guna dan berdaya guna dengan hasil yang diharapkan adalah pengurangan secara signifikan risiko dan kerugian akibat bencana. Penelitian ini bertujuan untuk mengeksplorasi persepsi perawat terkait dengan kesiapan perawat merespon bencana, kesiapan perawat menghadapi bencana, peran perawat terhadap bencana, hambatan dan dukungan memberikan pelayanan bencana. Metode yang digunakan adalah metode deskriptif kualitatif dengan pendekatan fenomenologi, Pengambilan sampel secara purposif digunakan untuk memilih 10 perawat untuk diskusi kelompok terfokus dan empat perawat untuk wawancara mendalam. Data dikumpulkan dari Januari hingga Februari 2024 dan dianalisis menggunakan analisis tematik. Kesiapan merespon bencana mencakup dua subtema: pengalaman kebencanaan dan alasan segera merespon bencana. Kesiapan tenaga kesehatan menghadapi bencana terdiri dari empat subtema: peringatan dini, kolaborasi, sumber daya, pengembangan pelatihan spesifik. Peran tenaga kesehatan terhadap bencana terdiri dari dua subtema: tahap kesiapsiagaan dan tahap respon. Selain itu hambatan dan dukungan memberikan pelayanan bencana terdiri dari dua subtema: hambatan yang dialami dan dukungan yang di perlukan dalam memberikan pelayanan keperawatan ketika terjadi bencana. Temuan penelitian ini dapat sebagai dasar untuk mengembangkan program peningkatan kesiapsiagaan bagi perawat dan tenaga profesional kesehatan. Hasil studinya juga bisa dapat digunakan sebagai bukti penting untuk mendorong kebijakan layanan kesehatan bencana dalam upaya pengurangan resiko yang diakibatkan bencana dengan keterlibatan pemangku kepentingan.

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## INTRODUCTIN

Preparedness for emergencies and disasters at the individual, group, and organizational levels can be a more effective tool for lowering the potential severity of disasters and their effects also plays critical role in disaster risk reduction (DRR) (Gregory et al, 2006; Veenema, 2007). Preparedness is a set of efforts undertaken to anticipate disasters through organization and proper and efficient steps (RI Law No.24 of 2007). Effective preparedness reduces susceptibility, increases mitigation levels, allows for early and effective responses to disaster events, decreases the recovery period, and boosts the resilience of communities. The Sendai Framework for Disaster Risk Reduction 2015-2030 anticipates a significant decrease in disaster-related risks and losses (WHO, 2015).

The main emphasis of disaster and emergency preparedness efforts is human behavior, which includes interactions between individuals and the environment as well as community risk perception based on past direct and indirect experiences with disaster occurrences and emergencies. Behavior change techniques are utilized to guide how the outcomes of this process can be turned into protective actions (Ejeta et al, 2015). All of the studies that were found through a literature search indicate that nurses are only merely moderately prepared for dealing with disasters (Huriah & Farida, 2010; Abdelalim, 2014; Usher et al., 2015; Al Thobaity et al., 2015; Labrague et al., 2016; Oztekin et al., 2016; Nilsson et al., 2016; Tzeng et al., 2016; Alzahrani & Kyratsis, 2017; Sangkala & Gerdtz, 2018; Martono et al., 2019)

Following history, the nursing profession has demonstrated an exceptional commitment to providing care for victims of war disasters, as evidenced by Florence Nightingale's treatment of British-French allied soldiers injured during the Crimean War against Russia in Turkey (Jakeway et al., 2008). Technical skills and knowledge of nurses responding to disasters regarding epidemiology, physiology, pharmacology, psychology, and cultural background of victims and families when facing various situations during disasters (International Council of Nurses, 2009). Nurses must possess the flexibility to adjust to difficult and dangerous work environments, limited resources, and unpredictable conditions that may differ significantly from their regular work environments (Baack & Alfred, 2013)

According to the BNPB, the Mamuju earthquake on January 14, 2021, caused approximately 106 deaths, 666 serious and moderate injuries, 8,971 reported minor injuries, and approximately 35,520 people displaced to 30 different locations. Additionally, the earthquake caused material losses totaling more than IDR 829.1 billion due to damage to buildings, infrastructure, and other facilities. Earthquakes, for example, will result in deaths and injuries, loss of supplies (food, fuel, goods), loss of communications, loss of power, loss of water services (fresh water, rainwater, waste water), loss of social services (financial, nursing, medical), business losses, and loss of social structure and functions (Li et al. 2014; Abdullah, 2017; Davies & Davies, 2018; Chong et al., 2018).

The rising frequency of disasters in Indonesia in recent years has led to the emergence of a wide range of problems in a number of regions (Suprayitno et al., 2020; BNPB, 2016). Nursing is the largest health profession among all other health professions. Currently, Indonesia has 621,652 nurses, with 4,433 in West Sulawesi (Directorate General of Health Worker, 2023). Well-prepared nurses will be safe to provide care in emergency situations, particularly during natural disasters. Following the enactment of the nursing law and the publication of the Health Law, it was stated that the nursing profession, as a health worker, played an important role in disaster health services, including pre-disaster health planning, health services during a disaster, and post-disaster health care (RI Law No. 38 of 2014; RI Law No. 17 of 2023).

Nursing human resources (HR) must be prepared to respond effectively to disasters in the hope that nurses can provide proper medical services to affected communities (Corrigan & Samrasinghe, 2012; Abdelalim, 2014; Perron et al., 2010). Increasing human resource capacity is customized to demands and aimed at improving employees' ability to perform their duties professionally (PMK RI, No 75 Thn 2019). The implementation of disaster management has shifted the paradigm of disaster management in Indonesia from a responsive emergency response concept to a preventive disaster risk reduction concept (Law No. 24 of 2007). However, previous studies have not addressed the willingness to respond to disasters, the readiness of health workers to face disasters, the role of health workers in disasters, and the obstacles and support for providing disaster services. Thus, qualitative research will be successful in offering fresh information on this topic. In addition, the results are anticipated to help nurses and other medical experts in creating programs for health workers to reduce risks related to disasters.

## METHOD

### Research Type

This study employed a qualitative descriptive design (Lambert & Lambert, 2012), a phenomenological approach, and thematic analysis.

### Research Location and Time

This study was conducted at the Kebumen District Health Service. The study ran from January to February 2024.

### Population and Sample

The population in this study were all nurses with disaster management expertise in Indonesia, including hospital emergency room nurses and nurses from community health health centers. The sample was determined using the purposive sampling method. Ten participants were involved in the focus group discussion (FGD), while four participated in in-depth interviews. The eligibility criteria for nurses for focus group discussions and in-depth interviews are as follows: (i) willing to participate in the study by signing an informed consent form; (ii) proficient in communicating in Indonesian; (iii) having experience managing disasters as a team member or as a nurse in a disaster area; and (iv) having completed emergency nursing and/or disaster nursing training, a two-year limit is applied to obtain information that can still be remembered well by participants. The exclusion criteria for nurses for focus group discussions and interviews are as follows: (i) On leave or on long-term leave; (ii) Unwilling to participate in an FGD or be interviewed.

### Data Collection

Data has been collected through focus group discussions (FGDs) and in-depth interviews. The research team designed FGD guidelines to investigate individual and context-related factors influencing nurses' motivation to respond to disasters, readiness to face disasters, the role of nurses in disasters, and challenges and support for providing services during disasters. The focus group discussion was conducted with ten nurses working at the Kebumen Health Service in Central Java. Each FGD comprised of five nurses per group, with a moderator and note-taker present to stimulate conversation and supervise the group. This activity allows the facilitator to actively participate in the FGD by responding vocally to the subjects raised. Researchers also used open-ended questions to encourage nurses to consider and share their disaster preparedness ideas and experiences. The researcher acted as moderator and was responsible for taking notes.

Each FGD lasts about 60 and 90 minutes, or until repetitive information is found. The entire FGD procedure was audio recorded. The FGD consists of four primary questions: (i) "Can you tell me about when a disaster occurred, what initial response did you make/feel?", (ii) "In your opinion, what do you know about disaster preparedness and what things influence it?", and (iii) "according to you, what are the roles of disaster nurses?", and (iv) the final question: "according to you, what are the obstacles and support needed to prepare disaster nurses?". The guideline's content was examined by three disaster nursing and qualitative research professionals. In addition, four individual in-depth interviews were done in a private location at a convenient time selected by the participants. The research team also created an in-depth interview guide, including the same questions as the focus group discussion.

### Data Processing and Analysis

Content analysis was used to analyze the data iteratively (Miles & Huberman, 1994). Transcripts from each group were read, and categories were reviewed several times to ensure that concepts concerning the same phenomenon were classified appropriately. During the data collecting and analysis procedure, the primary author identified categories and content, which were then confirmed by two co-authors for coding consistency, category emergence, and statement extraction for each category and sub-category. Coding, categories, and important findings were discussed among the co-authors until an agreement was established.

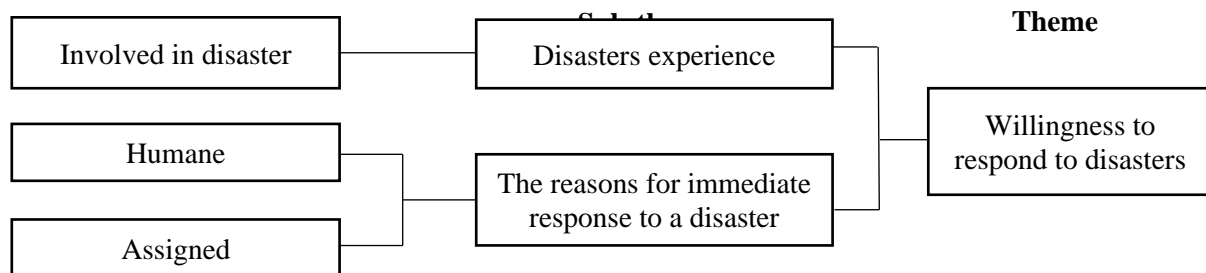
The researcher used four Lincoln and Guba (1985) criteria to assess the study's reliability. Reliability is proven by triangulation and member validation, and transferability is achieved through detailed description. Field notes were taken throughout the study to ensure reliability, and the advisory committee served as auditors. The analysis's confirmability was determined by an analytical audit and triangulation approaches, which included in-depth individual interviews and focus group discussions.

## RESEARCH RESULT

Based on data analysis from focus group discussions and interviews, four main themes emerged: 1) willingness to respond to disasters, 2) nurse preparedness for disaster, 3) nurse role for disaster, and 4) obstacles and support for disaster services.

### Theme 1: Willingness to respond to disasters

This topic is composed of two sub-themes: the experience of a disaster and the initial responses of nurses when a disaster occurs, namely disaster experience and the reasons for immediate response to a disaster.



Scheme 1. Willingness to Respond to Disasters

#### Sub-theme 1.1: Experience with disasters

The Big Indonesian Dictionary (kbbi.kemdikbud.go.id) defines experience as "what has been experienced." In this study, disaster experience is defined as an occurrence that has been felt, experienced, and carried out in the past. The sub-theme of disaster experience has one category, which is being involved in disasters, as quoted by participants:

*"...the first time I took a part in disaster response activities was as DPK... during the flood disaster.."* (P<sub>1</sub>)

*"First involved in it that the information received about tidal floods is not similar to landslides that can occur instantly, thus the water gradually rises like that"* (P<sub>6</sub>)

*"Perhaps it's just my experience, sir. I was only in the community health center for 2 years and 4 months as an implementer... when the disaster occurred"* (P<sub>2</sub>)

*"The fact is that areas prone to disasters are floods, and we have undergone disaster preparedness training on multiple occasions..."* (P<sub>7</sub>)

#### Sub-theme 1.2: Reasons for immediate response to a disaster

According to the Big Indonesian Dictionary (kbbi.kemdikbud.go.id) reason is what drives someone to act in a certain way. In this study, the reason for immediately reacting to a disaster might be viewed as something that encourages nurses to act quickly when a disaster occurs. This sub-theme comprises two categories, as follows:

##### a. Humane

According to the Big Indonesian Dictionary, humane is an attitude that describes a desire to do something humanitarian and social interest as cited from the participant's expression below.:

*"...indeed, our friends' awareness needs to be brought up, still not everyone is worried about the disaster....."* (P<sub>5</sub>)

*"In my opinion, we must prepare ourselves."* (P<sub>10</sub>)

*"Because we never know when a disaster might happen, I believe the most important thing is to act from our heart... in a disaster..."* (P<sub>3</sub>)

*"If we are prepared, the urge to be a nurse comes naturally, it is similar to being prepared for a disaster, god willing, it will go by itself intuitively.."* (P<sub>2</sub>)

“...Regretfully, if they find field activities distressing or even terrifying, they won't seem to move much.” (P<sub>8</sub>)

“...I, myself, motivated by humanity, the people here need help...”(P<sub>1</sub>)

“...yes I use my vehicle ... it's not a big deal, it's for a humanitarian mission.” (P<sub>2</sub>)

**b. Assigned**

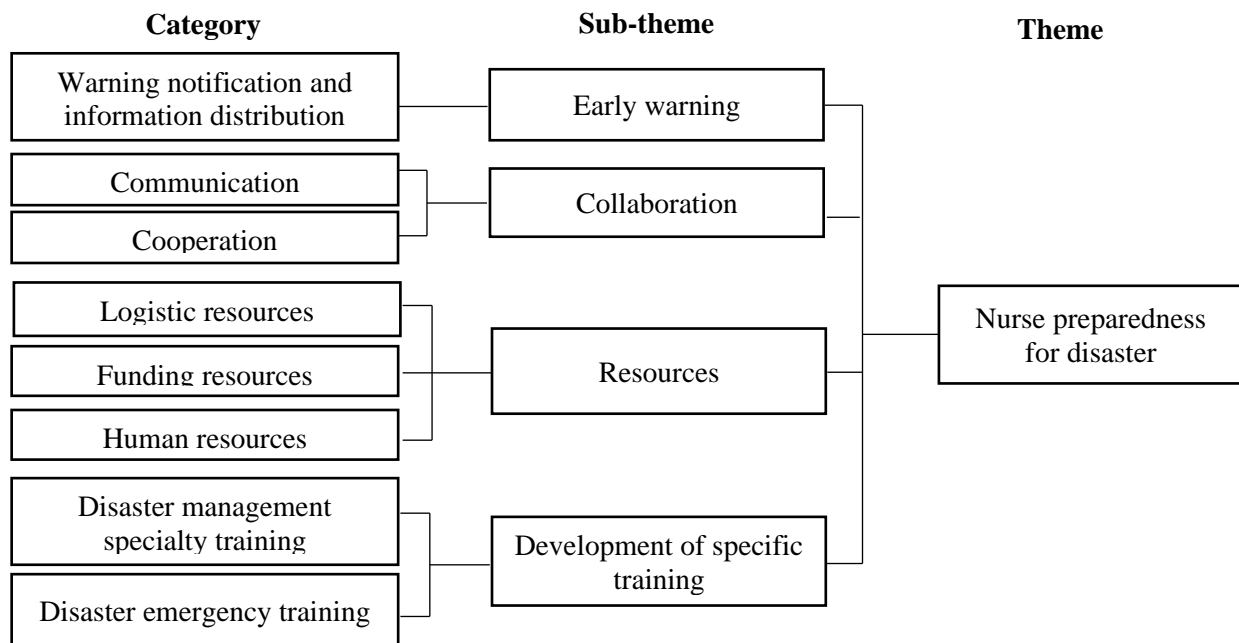
The reason for responding immediately is because being assigned means that the task that must be carried out is given by the superior or nursing institution, as quoted by the participant as follows:

“...being able to participate is frequently due to an assignment from superiors, not from oneself or willingness..” (P<sub>3</sub>)

“...taking part in disaster activity... in the sub-district where I work at a community health center, there was a flood disaster on the authority level, and my organization's area also did the same” (P<sub>4</sub>)

**Theme 2: Nurse preparedness for disaster**

This theme is composed of four sub-themes of nurses' understanding of disaster preparedness: early warning, collaboration, resources, and the provision of specific training. The following scheme describes this theme:



Scheme 2. Nurse preparedness for disaster

**Sub-theme 2.1: Early warning**

Early warning is a sequence of activities conducted by authorized organizations to alert the public as soon as possible of the risk of a disaster occurring in a particular area (RI Law No. 24 of 2007). The self-warning sub-theme is divided into two categories: warning notification and information distribution, as quoted by participants as follows:

“...before doing what is known as a disaster investigation, we will look into areas that have the potential for disasters to see what happened there” (P<sub>7</sub>)

“...the highlands with their landslides must be able to map the disaster” (P<sub>10</sub>)

“Because we don't know when disasters will come” (P<sub>2</sub>)



*“Personally, I believe there is a possibility of a tsunami here because the sea is only a kilometer away.” (P<sub>1</sub>)*

*“...Friends who live in places with high mountains and landslides must be able to map the disaster.” (P<sub>6</sub>)*

*“...before the disaster, it had been anticipated that there would be landslides, flooding, and dam failures...” (P<sub>3</sub>)*

### **Sub-theme 2.2: Collaboration**

Collaboration in the Big Indonesian Dictionary refers to cooperation (effort). Collaboration in disasters can be defined as working with people from different sectors to gather knowledge and communicate effectively to anticipate disaster risks. This subtheme comprises two categories, as follows:

#### **a. Communication**

Effective disaster communication in disaster management is defined as communication that occurs not only during emergency response but also during pre-disaster or preparedness and after the disaster or rehabilitation and reconstruction period, as quoted by participants as follows:

*“...collaboration with the head of sub-district, and the authority here...” (P<sub>9</sub>)*

*“...it is the head of district who decides whether there is a disaster or not, especially the regent, once he has coordinated directly with the teams then we move” (P<sub>3</sub>)*

*“...especially at RSDS Kebumen, for this disaster is under the auspices of the Health Office ...” (P<sub>7</sub>)*

#### **b. Cooperation**

Law Number 24 of 2017 clarifies that in addition to being the responsibility of the BNPB, implementing disaster management also necessitates the creation of Memorandums of Understanding and Cooperation Agreements with other parties, such as Ministries/National Institutions, Educational Institutions, Community Institutions, and the Business World. This is evidenced by the following expressions of several participants:

*“At that time eeee it's obvious I coordinated the regional village midwife supervisor.” (P<sub>5</sub>)*

*“We're working with the BPBD MoU to ensure that there is a leader, energy, and materials and that everything is connected.” (P<sub>1</sub>)*

*“...cross-sectoral cooperation, that comes from our institutions as well ...” (P<sub>2</sub>)*

### **Sub-theme 2.3: Resources**

The resources needed for recovery or survival in a disaster or emergency are gathered locally or externally from the disaster-affected area. The resources sub-theme contains three categories, as detailed below:

#### **a. Logistic resource**

Logistics management from the stages of analyzing logistical needs, recording, and distributing disaster logistics can be done quickly and precisely in terms of time, location, target, quantity and quality. As stated by the following participant:

*“...food, specifically fast food, is a type of logistical resource.” (P<sub>4</sub>)*

*“...packaged rice, how many packs at that time? Then needs for babies such as diapers and biscuits” (P<sub>10</sub>)*

*“...needs for food, food ingredients that are druped, we find it difficult to cook, while for example we eeee build a public kitchen for residents to cook...” (P<sub>5</sub>)*

*“...the medicine must be ready, as must the tools and medicines; at the very least, we must prepare the tools that will be used in the event of a disaster ...”*(P<sub>9</sub>)

*“...for disaster preparedness, so that when a calamity strikes, we have everything prepared, including PPE, equipment, medicine, and so on...”*(P<sub>2</sub>)

#### **b. Funding resource**

Disaster management funds are used to manage disasters before, during, and/or after they occur. Participants emphasized the importance of funding in disaster management, as follows:

*“...Perhaps it comes from bureaucracy; the relation to beureaucracy is usually about fund; without funding, it cannot work.”* (P<sub>3</sub>)

#### **c. Human resource**

Preparing Human Resources (HR) that are resilient and aware to mitigate the impact of disasters. Currently, there is a gap between the threat of disasters and the availability of disaster management workers. This condition is seen in the following participant statements::

*“...Perhaps it can be done later with human resources...”*(P<sub>7</sub>)

*“Because, you know, there weren't enough officers and volunteers back then...”*(P<sub>8</sub>)

### **Sub-theme 2.4: Development of specific training**

Disaster training is critical since it seeks to improve competence, both in terms of knowledge, abilities, and attitudes of nurses toward disaster management. This specific training development sub-theme comprises two sections, namely

#### **a. Disaster management specialty training**

Participants stated that the absence of disaster nursing competency needs specialized training that simulates actual situations for disaster nurses to be competent in disaster management. Some participant quotes are as follows:

*“...a nurse is, should have the expertise necessary to be ready in the case of a disaster since they would need it then.”* (P<sub>1</sub>)

*“The common problem is that they already have competency but lack of experience in real situations.”* (P<sub>4</sub>)

*“...maybe we can offer training, perhaps specific training in disasters which it does have special criteria that are included.”* (P<sub>2</sub>)

*“...just know it in general terms, we as nurses are involved in a disaster... only that. ...”*(P<sub>10</sub>)

*“...The nurses' cars in the impacted areas are evacuating in the field rather ... than leaving ... the meaning of the first evacuation indicates there is a red, black code.”* (P<sub>3</sub>)

*“...simulation is also included in the sense that the necessary simulation is needed”* (P<sub>6</sub>)

*“...at least once or twice a year, there should be simulation exercises...”*(P<sub>5</sub>)

#### **b. Disaster emergency training**

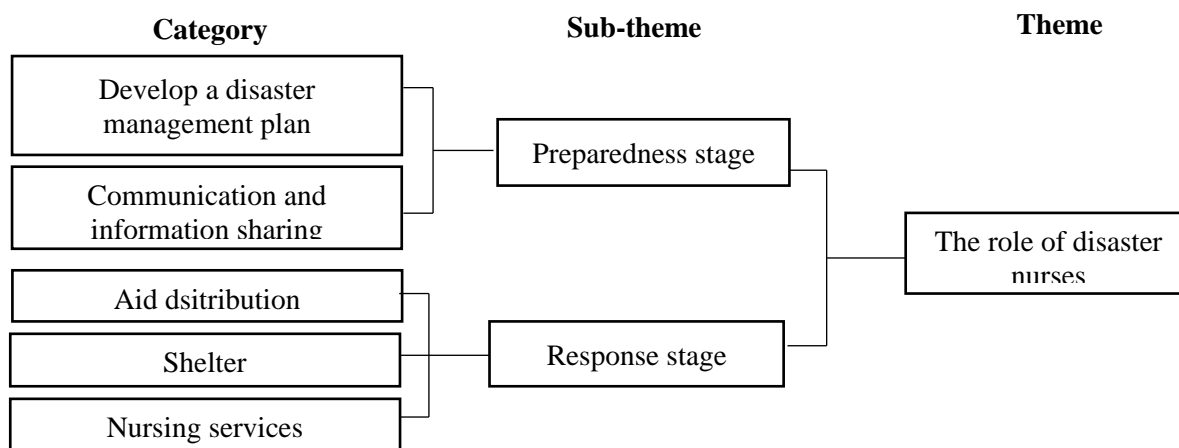
Emergency Management Training teaches knowledge and abilities for coping with emergencies, including first aid. As stated by the following participant:

*“...my fellow nurses are constantly updating their expertise of how to handle emergency patients, basic cardiac live support, and so on.”* (P<sub>1</sub>)

*“...First, perhaps addressing emergencies is the most important thing in my opinion; perhaps it's not just when there is a flood only”* (P<sub>2</sub>)

### **Theme 3: The role of disaster nurses**

This theme is divided into two sub-themes about the role of nurses in disaster preparedness: the preparedness stage and the response stage. This topic demonstrates that nurses play a crucial role in delivering nursing care throughout the disaster response stage. The following scheme describes this theme:



Scheme 3. The role of disaster nurses

### Sub-theme 3.1: Preparedness stage

Nurses' disaster preparedness is critical in determining the success of disaster management. The sub-theme of the function of nursing at the disaster preparedness stage includes two categories:

#### a. Develop a disaster management plan

Nurses must be ready to prepare themselves for disaster scenarios. Participants reported that not all had prepared for disasters, as stated in the quote:

*"...overall the preparedness of nurses is still low..."* (P<sub>5</sub>)

*"...In a disaster, we just choose a few fellows who are ready 24 hours..."* (P<sub>9</sub>)

#### b. Communication and information sharing

The advancement of communication and information technology allows us to exchange information more easily, making disaster management more effective. As stated by the participant, as follows:

*"...I took action with our financial reserve and informed my fellow to report any flooding in their area..."* (P<sub>4</sub>)

*"...certainly perhaps the communication between aid providers or disaster management sometimes, so eeee what is my final step is communicate it to BPBD..."* (P<sub>8</sub>)

### Sub-theme 3.2: Responses stage

The response phase consists of efforts conducted both during and shortly following a disaster or emergency to preserve lives and prevent further damage. The response phase entails putting the preparedness plan into action. The roles undertaken by nurses in the response phase are classified into three categories, as outlined below:

#### a. Aid distribution

One of the nurses' responses is to distribute supplies to reduce the burden on disaster-affected populations, as the catastrophe disrupts local economic activities. Some participant quotes are as follows:

*"...the packaged rice is well distributed, how many packs at that time? Then needs for babies such as diapers and biscuits. and what is no less important is drinking water, because all the residents' drinking sources are filled by the flood..."* (P<sub>1</sub>)

#### b. Shelter

In the context of disasters, it refers to a procedure and approach for managing, treating, and empowering refugees in refugee camps until they can find a new place to live. As stated by the



participant, as follows:

*“...Identify the first need, whether there are refugees or not; apparently, there were few refugees at the moment, but as the night progressed, there were more and more...”* (P<sub>10</sub>)

*“As time passes, it appears that the identification of refugee needs is also progressing...”* (P<sub>5</sub>)

**c. Nursing services**

Nursing is a flexible career that covers all settings; nurses are not only necessary to provide care in hospitals, but are also required to be able to work in disaster response preparedness conditions.

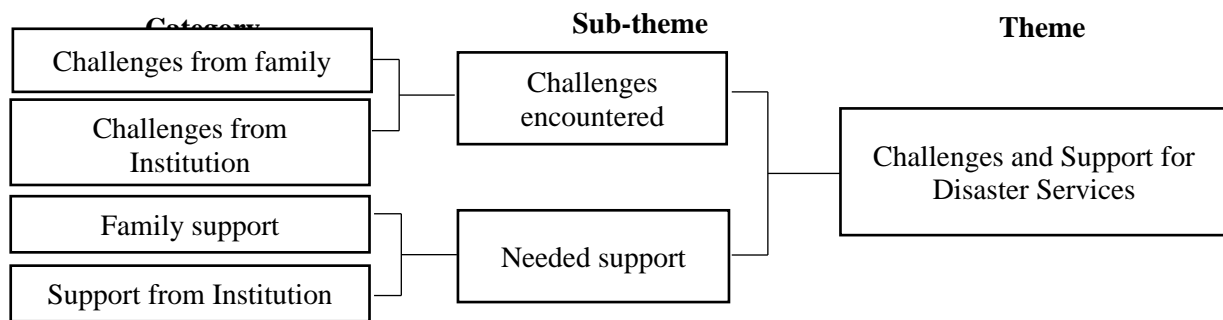
*“...Fractures require techniques, such as assisting in lifting this patient to examine where the fracture is”* (P<sub>2</sub>)

*“You can't just throw away an evacuation; it's crucial to carry out an evacuation in case of emergency or disaster”* (P<sub>7</sub>)

*“The triage is done, only for the pick-up team, whether it's red triage, we normally direct them to the nearest hospital”* (P<sub>3</sub>)

**Theme 4: Challenges and Support for Disaster Services**

This theme is made up of two sub-themes on hurdles and support for disaster services, including the obstacles encountered and the support needed to provide nursing services during a disaster.



Scheme 4. Challenges and Support for Disaster Services

**Sub-theme 4.1: Challenges encountered**

The challenges that participants frequently mention while wanting to participate in disasters include family and workplace factors, which make obtaining permits difficult.

**a. Family challenge**

The difficulty of leaving family and permission from family members who do not understand and worries regarding personal safety threats in disaster areas, as quoted by participants, are as follows:

*“...I have a husband who is not in the medical field, so perhaps if I tried to share understanding with my husband or family, there will be a misinterpretation, and that's the challenge exists at first.”* (P<sub>4</sub>)

**b. Institutional challenge**

Participants stated that it is often difficult for institutions to give permission if a disaster is not in their work area or disaster equipment and facilities, thus they frequently take their initiative to participate in disasters, as quoted below:

*“...the challenge could be transportation, because in the past when there was a disaster, we sometimes used private transportation. After all, there is no designated transportation to carry logistics, so we use our own vehicles. ...”* (P<sub>6</sub>)

*“...maybe sometimes parties here and there do a lot of controlling so sometimes..bureaucracy...”*(P<sub>2</sub>)

*“...we want it as executors to carry out the implementation safely and without any obstacles or procedures, which is the problem; when we do but do not report it, things go wrong.,...”* (P<sub>9</sub>)

#### **Sub-theme 4.2: Needed support**

Health support for disaster management can be provided in an effective, efficient, and accountable manner, requiring comprehensive support efforts for disaster nurses. This support includes family involvement in disasters as well as institutional support in the form of permits and infrastructure that facilitate effective disaster management.

##### **a. Family support**

Participant statements after explaining their involvement in the disaster are very much needed, such as the following excerpt:

*“...Giving my husband an understanding when we often have to go back and forth to the disaster scene.”* (P<sub>7</sub>)

##### **b. Institutional support**

Government support, both central and regional, in nurses' efforts to deal with disasters, is also needed so that nurses feel comfortable and can carry out their duties well, according to the following quote:

*“The flow should not be excessively complicated so that we as implementers have no difficulty with the current flow”* (P<sub>6</sub>)

*“We can't just go to where the disaster occurred. In terms of management, we need to prepare the team first...”* (P<sub>3</sub>)

*“...as soon as a disaster occurs, information should flow down informing personnel that there is a disaster and how many personnel are prepared, including doctors and nurses.”* (P<sub>5</sub>)

## **DISCUSSION**

### **Willingness to respond to disasters**

The Big Indonesian Dictionary ([kbbi.kemdikbud.go.id](http://kbbi.kemdikbud.go.id)) defines willingness as the ability to do something. Willingness to respond to a disaster is described as the ability (willingness) to be present and help disaster victims. Knowledge of the client's condition is conveyed by emotional and physical presence, and carried out for the client to empower the client's abilities (Alligood, 2017; Lillykutty & Samson, 2018). The preparedness of health professionals to respond to disasters has a significant impact on health system response capacity (Shapira et al., 2019). Willingness is a key factor in increasing nurses' preparedness for dealing with nuclear radiation disasters (Hirohara et al., 2019; Veenema et al., 2019). Increasing people's willingness to get involved in disasters is critical to ensuring adequate workforce numbers when disasters occur. (Al-Hunaishi et al., 2019)

Participants stressed the theme of willingness to respond to disasters, specifically their experience participating in disaster activities, social spirit, and the existence of job obligations from superiors or institutions. Participants who have dealt with disasters claimed to be more prepared as a result of their experiences. According to Labrague et al. (2016), one of the reasons for nurses' lack of preparedness is a lack of experience with disasters. Aside from that, Putra et al. (2011); Baack & Alfred (2013); Tzeng et al. (2016), state that nurses with experience caring for victims have stronger disaster management abilities. So, experience dealing with disasters can help nurses prepare if it is thought that the nurses learned from the experiences they encountered. Previous research supports that previous experience dealing with disasters, clinical experience especially in emergency and critical rooms, and disaster training are significant factors that influence nurses' readiness to respond to disasters (Ranse et al., 2013; Wenji et al., 2015; Shipman et al., 2016; Tzeng et al., 2016).

Nurses' social behavior naturally emphasizes humanitarian calls. According to the International Committee of the Red Cross (ICRC) in the Sphere Project handbook (2004), the right to receive and provide humanitarian assistance is a core humanitarian concept that all people share. Priority must be placed on providing widespread access to disaster-affected populations. Social conduct is also defined

as conscious activity and volunteerism to help the recipient (recipient), whether the action has a monetary value, has no impact, or benefits the giver (donor) (Hafiz et al., 2018).

Current study indicates that the company or institution where the nurse works has a significant impact on the nurse's willingness to respond to a disaster. Several participants expressed willingness to help disaster victims since it was the institution/superior's job and obligation. Superiors or institutions may give orders/instructions to nurses to help with catastrophe victims, both during and after working hours. This commitment increases the nurse's willingness. Aside from that, support from supervisors in the form of permission to help catastrophe victims outside of working hours, accommodation, transportation, and equipment stimulates nurses' motivation. Thus, the current research indicates that active participation by institutions and supervisors has a significant impact on boosting nurses' preparedness and willingness to respond to disasters.

### **Disaster nursing preparedness**

During a disaster, nurses must be alert to help earthquake victims. Nurses play a vital role in society by helping people in avoiding and be safe from danger. Early warning systems are an essential component of disaster preparedness (Trzeciak & Rivers, 2003). Warning systems are critical to ensuring that people benefit fully from pre-disaster preparedness, such as getting disaster warning information immediately and accurately (ISDR, 2009).

Communication is essential in disasters, not only during emergency situations, but also in the lead-up to the disaster. According to Haddow (2008), communication is the most effective strategy to mitigate, prepare for, respond to, and recover from a disaster. The ability to communicate disaster-related information to the general public, government, media, and opinion leaders can help to decrease risks, save lives, and mitigate the effects of disasters. Essentially, to reduce disaster risk, it is vital to promote awareness and preparedness efforts using suitable disaster management principles (Faturahman, 2018).

The success of implementing disaster management certainly depends on the ability and strategy of Regional Government institutions to make policies and implement them effectively (Hizbaron, et al., 2021). Therefore, the main requirement for disaster management activities is integration across institutions and sectors under an integrative approach based on cooperation or partnership among all stakeholders, including local communities (Tamitiadini, 2019). Because when all stakeholders are involved in disaster management efforts as an embodiment of participatory democracy, they will be able to recognize, organize, and disseminate knowledge that policymakers—in this case, the Regional Government—can use as a guide for disaster management (Haeril et al, 2021).

Limited equipment is caused by current equipment being crushed by construction or a lack of prior preparation, making it difficult for nurses to help victims (Wenji, et al., 2014; Kayama et al., 2014). Despite their limited resources, nurses did their utmost to respond to an earthquake disaster. Limited resources, including tools and manpower, need nurses to think creatively to provide optimal nursing actions and services to victims (Yan, et, al., 2015). With limited tools when an earthquake occurs, nurses need certain skills in difficult situations to optimize performance and nurses are able to save the victims (Shipman, 2016).

The lack of training and understanding in earthquake disaster management is a new experience for nurses. Yan, et, al., (2015) found that nurses felt unprepared for catastrophes due to a lack of disaster training. Nurses require disaster education to improve their alertness in reacting to the unpredictable earthquake disasters they may encounter (Wenji, et al., 2014). Lack of disaster education or training can leave nurses underprepared to respond to earthquake disasters, whereas only nurses are capable of protecting residents during a disaster (Sato, 2014; Shipman, 2016). When responding to a disaster, nurses must have knowledge and experience in taking action so that they know what to do when it occurs (Sato, 2014).

### **The role of the disaster nurse**

Nurses are at the forefront when an earthquake occurs. Being the largest category of healthcare providers, nurses are essential to disaster management (Labrague, et al., 2018). Nurses must be highly knowledgeable, skilled, and competent when dealing with disasters (Sato, 2014). During a disaster, nurses' roles expand beyond providing clinical care (Moradi, et al., 2020). Nurses play a critical role in disaster preparedness and response. (Doondori, A. K., & Paschalia, Y. P., 2021).

The role of nurses in disasters is divided into three stages: before, during, and after the crisis

(Firouzkouhi et al., 2021). Before a crisis, the nurse's responsibility is to ensure that each individual has the skills to manage the situation. This readiness and skills training includes physical readiness, mental readiness, and understanding in responding to a crisis; clinical skills training, including trauma, triage, and evacuation, understanding of injury management procedures, clinical evaluation, and working with equipment and units; group training, operational competency, mission type knowledge, leadership and management skills, interacting with units, and area identification (Shinchi et al., 2019). During a crisis, roles include organizing deaths and evacuation priorities, setting up areas for triage, establishing roles and job descriptions of active personnel in the area, providing good stretchers, providing emergency communications (using field telephones and personal portable radios), designing and connecting the various stages from injury reception to evacuation, and creating areas for triage (Shinchi et al., 2019; Mustikasari et al., 2020). After a crisis, the nurse's role is to provide care for individuals undergoing evacuation in specialized hospitals, to reconstruct and repair damaged facilities and equipment, to evaluate and reconstruct disaster injury and death plans, to provide psychological support to survivors, and to handle assessment, restructuring, and rehabilitation. Joint actions with other employees. (Hugelius & Adolfsson, 2019; Shinchi et al., 2019)

### Challenges and Support for Disaster Services

Nurses have a moral dilemma since they must leave their families, and when a subsequent disaster occurs, they must save more victims while also feeling intimidated and traumatized by horrific circumstances (Yan et al., 2015; Li et al., 2016). Nurses experience conflict between their roles as nurses and their responsibilities to the community in the field. Another source of friction is nurses' dual roles as civil servants and citizens obligated to safeguard their families. Nurses experience internal emotional problems as well as the dilemma of ensuring the safety of their families (Kayama et al., 2014; Shipman, 2016). Nurses had mixed feelings during the disaster period with uncertain job roles; some evacuated, stayed and worked, while others had their workplace closed and subsequently worked outside their place of employment. (Nakayama, 2019)

Family support in the form of permission is an important aspect that encourages nurses to participate in disaster management. When a disaster happens, nurses must respond immediately and be prepared to deploy to the disaster site whenever necessary. This situation undoubtedly necessitates time away from family members as well as moral support. Nurses will feel more at ease about helping catastrophe victims if they have permission and complete support from their families. According to a systematic analysis conducted by Labrague, et al (2018), family support and approval were consistently recognized in several research as the most important determining factor impacting nurses' preparedness to respond to crisis circumstances.

Workplace institutional elements and a strong disaster management system have been found as factors influencing nurses' disaster management effectiveness (Veenema et al., 2016). These factors include support from work institutional leaders, opportunities to take part in training, provision of logistics, facilities and infrastructure for disasters, as well as security, financial support and continuing education systems for nurses. Previous research has shown that nurses with previous training and disaster response experience, as well as solid self-confidence and support from their employers, can achieve higher preparation scores (Lim et al., 2013).

### CONCLUSION AND RECOMMENDATION

This study gives information and understanding on nurses' perceptions of flood disaster preparedness, with four major themes emerging. The issue of willingness to respond to disasters is composed of two sub-themes: different experiences and nurses' initial responses. The issue of being prepared for disasters is divided into four sub-themes: nurses' understanding of disaster preparedness, including early warning, collaboration, resources, and the development of specific training. The issue of roles in disasters is divided into two sub-themes: preparedness stage and response stage. Challenges and support are issues that stem from both familial and job factors. The findings can be used as basic information for disaster nursing as a service provider, particularly disaster nurses and public health nurses, to design and develop effective disaster preparedness programs and strategies among nurses and health professionals to reduce the risks related to disasters.

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