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## Original Article

# Expectations of survivors towards disaster nurses in Indonesia: A qualitative study

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## ABSTRACT

**Objective:** This study aims to explore the expectations of survivors towards disaster nurses.

**Methods:** The study used qualitative content analysis. Data were collected in 2017 through three focus group discussions with 21 survivors and in-depth interviews with three community leaders; the respondents had experienced one of the following events: a) an earthquake in Padang 2009, b) a volcanic eruption in Yogyakarta 2010, and c) flooding in Jakarta 2014.

**Results:** Four themes represented survivors' expectations of what nurses can do in responding to a disaster, including: a) provision of direct nursing care, b) provision of information of health service access, c) provision of resources through cross-sector coordination, and d) disaster preparedness activities for the community.

**Conclusions:** This study suggests the importance of disaster nurses having the competency to update information regarding healthcare access, particularly the utilization of health insurance and providing culturally competent care to the survivors. Disaster nurses are also expected to be able to train the community and families about preparedness-related activities. Besides, these disaster nurses should improve their competency in disaster risk reduction. More broadly, such nurses should have the ability to advocate and coordinate with the local government and other stakeholders regarding access to healthcare services and continuous rapid assessment, so that survivors receive immediate and appropriate treatment.

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## What is known?

- The World Health Organization (WHO) and the International Council of Nurses (ICN) have provided a framework for disaster nursing competencies.
- Studies related to the framework utilization to improve disaster nursing competencies have been studied across the world.
- Most available studies have focused on exploring nurses' views related to the expectation of disaster nursing competency. However, there is no study which focuses on survivors' perspectives towards disaster nurses.
- Available literature regarding framework utilization and expectation from different perspectives within the Indonesian context is even more limited.

## What is new?

- This study adds more references to what nurses can do in responding to a disaster from the perspectives of survivors, particularly in the context of Indonesia.
- This study offers valuable insights related to disaster nurses' competency for other countries which, like Indonesia, are also prone to frequent natural disasters.

## 1. Introduction

Nurses play vital roles when disasters strike, such as i) coordinating care and services, ii) triage officers, iii) first and relief

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**Table 1**  
Guideline for focus group and interview.

| Questions                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------|
| How was your experience when receiving health or nursing services during the disaster?                                  |
| What was the most memorable service and why?                                                                            |
| What kind of nursing and health services are needed during a disaster?                                                  |
| What was the priority demand of nursing and health services at that time?                                               |
| Based on your experience, how can the quality of disaster nursing and health services be improved?                      |
| From your perspective, what are the criteria for a disaster nurse who can respond to the needs of survivors adequately? |

responders, and iv) care providers [1]. However, healthcare delivery in disaster situations can only be successful when nurses have adequate competencies to respond effectively. Recognizing this urgent need, in 2009 the World Health Organization (WHO) and the International Council of Nurses (ICN) established a framework of disaster nursing competencies. This framework provided guidelines to inform the building of nurses' capacities for delivering disaster nursing services [2]. A review has shown that the framework has been utilized across the world, particularly to develop continuing education for disaster nurses [3].

The effort to develop disaster nursing competencies has been specific to each country's needs, involving nurses', managers', and healthcare professionals' perceptions [4–12]. These studies aimed to explore issues and expectations around disaster nursing competencies and how to achieve the required goals through education, policy, and research. Unfortunately, these studies did not include survivors' views of what nurses can or should do in responding to a disaster situation. There are some studies which involved disaster survivors, but their focus was on exploring survivors' experience in general, not specifically addressing disaster nursing practice [13–15]. A systematic review highlighted that the development of any service in health that took into consideration the users', providers', and managers' perspectives was likely to be more effective than if those considerations were omitted [16]. Likewise, understanding survivors' perspectives on what nurses can do in a disaster situation could ensure the nurses would deliver services based on the survivors' specific needs.

Indonesia is often struck by natural disasters, such as earthquakes and volcanic eruptions, because it is geographically located across several tectonic plates. Based on data from the National Disaster Management Agency of Indonesia, there have been a total of 5176 natural disaster strikes in Indonesia during 2016, and this number tends to increase annually [17]. Flooding, earthquakes, and volcanic eruptions are the three most frequent natural disasters that together caused the highest number of evacuations in 2016 (825,928 people) [17]. However, research related to nurses' roles and competencies in disaster areas is still rarely carried out. Few studies in Indonesia have focused on disaster nurses' perspectives regarding their roles and competencies [18–21]. Understanding survivors' views about the practice of nurses could provide valuable information for the development of disaster nursing competencies, particularly in Indonesia. Therefore, this study aimed to answer the following question:

*“What are the expectations of survivors regarding nurses responding to casualties during disasters in Indonesia?”*

## 2. Methods

### 2.1. Study design

A descriptive qualitative study with content analysis [22] was conducted to understand survivors' expectations of disaster nurses.

Considering that Indonesia consists of varied cultures, social characteristics, and experiences frequent natural disasters, the study was conducted in three areas: i) Padang city for earthquakes, ii) South Jakarta city for floods, and iii) the Sleman regency for volcanic eruptions. Data were collected through focus group discussions and in-depth interviews using a semi-structured guideline (Table 1).

### 2.2. Participants

A total of twenty-one participants for focus groups and three participants for in-depth interviews were included in this study (Table 2). Purposive sampling was used to recruit participants who met the following criteria: 1) had experience of large-scale damage resulting from disasters, 2) were able to speak the Indonesian national language, 3) received nursing and health services as a result of the disasters, and 4) were capable of recalling various events during the disaster. The inclusion criteria also applied to individuals who were considered to be members of vulnerable groups, such as pregnant women, breastfeeding mothers, children, elderly, disabled persons, and chronically ill persons. Those who were

**Table 2**  
Demographic data of participants in three research areas.

| Participant code                          | Age | Gender | Education level |
|-------------------------------------------|-----|--------|-----------------|
| <b>Area 1: Padang (earthquake site)</b>   |     |        |                 |
| <b>Focus groups</b>                       |     |        |                 |
| P1                                        | 36  | Female | Senior High     |
| P2                                        | 41  | Female | Senior High     |
| P3                                        | 65  | Male   | Junior High     |
| P4                                        | 59  | Female | Junior High     |
| P5                                        | 43  | Female | Senior High     |
| P6                                        | 49  | Female | Senior High     |
| P7                                        | 54  | Male   | Senior High     |
| <b>In-depth interview</b>                 |     |        |                 |
| P8                                        | 60  | Male   | Diploma         |
| <b>Area 2: South Jakarta (flood site)</b> |     |        |                 |
| <b>Focus groups</b>                       |     |        |                 |
| P9                                        | 36  | Female | Senior High     |
| P10                                       | 41  | Female | Senior High     |
| P11                                       | 54  | Female | Junior High     |
| P12                                       | 32  | Female | Senior High     |
| P13                                       | 37  | Female | Senior High     |
| P14                                       | 36  | Female | Senior High     |
| P15                                       | 61  | Female | Junior High     |
| <b>In-depth interview</b>                 |     |        |                 |
| P16                                       | 56  | Male   | Senior High     |
| <b>Area 3: Sleman (eruption site)</b>     |     |        |                 |
| <b>Focus groups</b>                       |     |        |                 |
| P17                                       | 55  | Male   | Junior High     |
| P18                                       | 38  | Female | Senior High     |
| P19                                       | 33  | Female | Senior High     |
| P20                                       | 32  | Female | Senior High     |
| P21                                       | 44  | Male   | Senior High     |
| P22                                       | 28  | Female | Senior High     |
| P23                                       | 33  | Male   | Senior High     |
| <b>In-depth interview</b>                 |     |        |                 |
| P24                                       | 55  | Male   | Senior High     |

under 17 years old at the onset of the disaster were excluded.

This study used focus groups as the main data collection strategy. However, the study also employed in-depth interviews to allow participants who wished to be included in this study but were unable to attend the focus groups because of conflicting schedules. Three interviewed participants were community leaders who provided meaningful information relating to the research question.

### 2.3. Ethical considerations

Ethical clearance was obtained from the Ethics Committee of the Faculty of Nursing, Universitas Indonesia. Moreover, formal requests for data collection were submitted to the relevant local governments and permissions were obtained. Each participant was provided with an information sheet that explained the objectives and procedures of this study. The participants were also assured that their participation in the study was voluntary and that their anonymity was guaranteed; thus, their withdrawal at any stage would have no impact on their work and/or daily lives. Furthermore, the researchers were aware that conducting a study in disaster areas, especially exploring survivors' past experiences might cause traumatization for participants. Therefore, it was important to be aware of the participants' negative experiences and to have prepared appropriate responses towards any traumatic reactions triggered by those events; such as facilitating psychological supports if necessary [23].

### 2.4. Data collection

Data were collected from August to September 2017. The gatekeeper from each site helped to identify potential participants based on inclusion criteria. Researchers then contacted potential participants to explain the study. Participants were given a minimum of 24 h to decide whether to join this study or to decline. Researchers further contacted those who agreed to participate to make prior arrangements for focus groups and interviews. Informed consent was obtained before conducting either a focus group or interview. The focus groups and interviews were conducted in the Indonesian national language and organized in the residential areas of the survivor participants. Each group or interview session lasted from 40 to 60 min and was recorded digitally. A guideline for the focus group and interview was employed. The guideline was developed from the literature review and expert consultation. During data collection, the researcher adjusted questions to take account of the information provided by participants. Detailed notes were also taken.

### 2.5. Data analysis

Data analysis and data collection were conducted continuously and simultaneously. All recorded data and detailed notes were transcribed and analyzed via content analysis. Focus group and interview texts were read multiple times. Units of analysis were extracted from the whole focus group and interview texts and then condensed into one text. Important sentences, keywords, or phrases that characterized expectations of disaster nursing practice were identified and highlighted. Common ideas in the text were sorted and coded based on their differences and similarities to create categories and sub-categories. The words and phrases within the categories were reduced by crossing out repetitions or similar words or phrases in order to reduce redundancies. After several modifications, the themes finally emerged. All authors participated in this process and discussed the development of the themes, categories, and sub-categories. Saturation was accomplished with the

24 participants (both focus groups and interviews) by using an individual response approach for generating themes and categories [24].

### 2.6. Trustworthiness

This study followed the four criteria proposed by Graneheim and Lundman to ensure the trustworthiness of qualitative content analysis research [25]. *Credibility* was ensured through peer debriefing, including discussion and sharing the data with co-researchers. *Confirmability* was gained by presenting the participants' quotations. *Dependability* was maintained through documentation of the analytical processes of the study to allow auditability. Lastly, *transferability* was ensured by presenting the description of the participants in this study. Moreover, two senior researchers from the national level of nursing associations and one researcher from the regional disaster management agency of Yogyakarta contributed to the validation process of the research results. Furthermore, four senior disaster researchers from Japan reviewed and agreed with the analysis process and results.

## 3. Results

In this study, participants from three different disaster sites were mostly senior school high graduates and female (16 participants). The reason why participants were dominantly female is that recruitment and data collection process was carried out during working hours, where mostly male survivors were in their workplace. Four themes developed from ten categories that represented the survivors' expectations, were revealed from the investigation (Table 3).

### 3.1. Expectation one: provision of direct nursing care

#### 3.1.1. Collaborative physical and mental health care in evacuation places

Most of the participants in this study experienced physical injuries, and the treatment should be provided in evacuation places due to disruptions of access. Firstly, through collaboration with other health professionals, a disaster nurse was expected to deliver interventions, including health assessment or checkups, and drug distribution. In the focus group of earthquake survivors, one of the participants shared how they received nursing care shortly after the shock until they were relocated to a safer site:

*"Nurses and doctors helped us from a chaotic situation. They gave us first aid, health checkups, medicine, pregnancy checkups, medication, and so on until we were relocated on a shelter."* (P2, FG1/earthquake site)

Similarly, in an interview with a flood survivor, he expected nurses to monitor his condition and give health education following the treatment:

*"Maybe it will be better if health education is provided more. I felt happy after the disaster. I got health checkup so I knew that my blood pressure and blood sugar were stable, including an explanation from nurses of what I should do."* (P16, Interview/flood site).

Furthermore, after experiencing traumatic events such as loss of property and loved ones, also living with many difficulties in shelters, the survivors felt that mental health care such as counseling and play therapy for children in the evacuation places might be helpful. The survivors of floods discussed these necessities:

**Table 3**

Expectation of survivors on disaster nursing practice.

| Themes                                                   | Categories                                                                                                                                                                                                                                         |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Provision of direct nursing care                         | Collaborative physical and mental health care in evacuation place<br>Integration of local cultural values on caring<br>Proactively visit the people in their home<br>Priority of vulnerable group<br>Referral of survivors to the nearest hospital |
| Provision of health care insurance information           | Information of health care insurance                                                                                                                                                                                                               |
| Provision of resources through cross-sector coordination | Facilitate provision of daily basic needs<br>Assistance in seeking a safe place for evacuation<br>Maintaining sanitation and clean environment                                                                                                     |
| Implementation of disaster health preparedness           | Conducting disaster health preparedness activities to strengthen the capacity of the community to deal with disasters                                                                                                                              |

*"Perhaps we can have more sharing sessions, such as being asked about our feeling or is there any health complaint or not. The session will comfort me."*(P9, FG2/flood site)

*"At that time, I was happy when our children were invited by health workers to play together. So our children felt happy and forgot about the traumatic moment."*(P10, FG2/flood site)

An interview with an earthquake survivor also revealed data that nurses need to be present shortly after a disaster occurs, to conduct screening for psychological problems, and then to deliver psychosocial interventions. This survivor expected that nurses could provide psychological care for traumatized children in the same way as other professionals did in the last disaster:

*"At that time an NGO came to assess and identify who had [psychological] problems, then gathered them ... like children with trauma, then they were entertained! at that time the NGO people were not nurses. I think the nurses were also needed at that time."*(P8, Interview/earthquake site).

### 3.1.2. Integration of local culture's value on caring

Some participants agreed that nurses should respect and integrate cultural values of survivors in nursing care delivery. This finding was particularly apparent among survivors living in permanent shelters following a volcanic eruption:

*"It was very stressful to live in a new place far away from Mt. Merapi, where we were born, socialize, farm, and work. Hopefully, nurses understood."* (P17, FG3/eruption site)

### 3.1.3. Proactively visit the people in their home

Most participants expected that nurses would not only stay in health camps but they should also carry out home visits. The survivors preferred to be visited for some reasons such as access constraints, physical weakness, or time limitations. A middle-aged man, a flood survivor, considered home visits by a nurse in an urban area to be possible, so he expected it to happen, as revealed below:

*"I hoped nurses and other health workers would come directly to our houses not only stay in a temporary health center."* (P16, Interview/flood site)

Nevertheless, where housing destruction was massive, and the survivors had to live in tents and camps, nurses should be present in the disaster site to readily help the survivors from panicking, due to insufficient health support:

*"The key is when a disaster strikes, at least the medical equipment and health workers, including nurses, are on standby in tents or at their posts, so that they are not far away and the people are not too*

*panicked."* (P8, Interview/earthquake site).

### 3.1.4. The priority of vulnerable groups

Participants in every group concurred that vulnerable groups including pregnant and breastfeeding women, children, elderly, disabled persons, and individuals with chronic illness should receive distinctive treatment from nurses and other healthcare professionals during a disaster. Two survivors from a volcanic eruption and an earthquake expressed the importance of this point:

*"Evacuation process and health treatment should be prioritized for elderly, pregnant women, and children."* (P19, FG3/eruption site)

*"Nurses from the public health centers came to houses and assessed any health complaint from survivors, especially pregnant women."*(P4, FG1/earthquake site)

### 3.1.5. Referral of survivors to the nearest hospitals

Many participants argued that nurses, as health team members, were equipped with adequate information about the referral system. Thus, the nurses were expected to facilitate survivors on the referral process to the nearest hospital for any further treatment required. Lack of information about admission procedures became the main reason why the survivors sought this assistance from nurses:

*"We hope that if the survivors need to be referred to hospital, the health workers who standby in the temporary evacuation shelter could facilitate us quickly. Because they understand more about how to register to the hospital rather than us survivors, so it would not take so much time and effort."* (P5, FG1/earthquake site)

## 3.2. Expectation two: provision of information of health service access

Many participants talked about issues related to access to health services in terms of the utilization of insurance benefits. The dynamic of focus groups allowed for sharing information about that issue during an acute phase of a disaster. The Indonesian government has offered hospital services to all disaster survivors without charge. Unfortunately, due to a lack of particular information, some of the survivors could not benefit from the health service. The access problems were also voiced by survivors from the interviews, as illustrated by a participant who was in the earthquake site as follows:

*"Because of not enough information, particularly for the poor people ... they worried about hospital fees, so they refused to go to a hospital even though their conditions were getting worse. They did*

*not know if it was free even for health service in a hospital.” (P8, Interview/earthquake site)*

### 3.3. Expectation three: provision of resources through cross-sector coordination

Most of the participants highlighted the need for resource delivery following health care provision. Issues particularly noted were: a) the fulfillment of basic needs, b) safe places, and c) clean environments, as detailed below.

#### 3.3.1. Facilitate the provision of daily basic needs

During the calamity, many survivors were forced to live without income and other economic restrictions. Thus, they found difficulties in meeting their day-to-day needs, such as food and clothes. Some participants expected nurses were able to facilitate the fulfillment of basic needs, as expressed below:

*“Our stockpiles of daily needs were not enough. So as a community leader, I communicated with all sectors both from the government and industries, including nurses, to find alternative resources to meet our daily needs.” (P8, Interview/earthquake site)*

#### 3.3.2. Assistance for seeking a safe place for evacuation

Some participants also considered that disaster nurses should help survivors to find a safe place for evacuation. A participant from the volcano eruption uttered such a hope, even though he did not use the word ‘nurse’:

*“When a disaster occurs, of course, the role of health workers is very significant. In this situation, where our houses were damaged, we needed to find shelters or other evacuation places. Well, it is the role of health workers to help us find those places.” (P24, Interview/eruption site)*

#### 3.3.3. Maintaining sanitation and clean environments

Participants in the focus groups and interviews who experienced the volcanic eruption voiced the need for sanitation and a clean environment, particularly in the evacuation centers. These participants narrated their serious difficulties, not only stemming from the damages but poor environmental conditions in shelters:

*“I was so stressed during in evacuation shelter because of poor sanitation, limited clean water, and small space.” (P24, Interview/eruption site)*

*“It was very uncomfortable in an evacuation shelter, sanitation was very poor, clean water was very scarce, and narrow space for each family.” (P21, FG3/eruption site)*

In the focus group with flood survivors, the participants agreed that health providers, including nurses, need to take into account the poor sanitation in shelters. The participants narrated the impact of the environmental issues that survivors chose not to stay at the shelter and return to their homes, even though the next flood was possible:

*“Some people refused to stay in the shelter because it was overcrowded and dirty. So we chose to stay in our house with many difficulties, but we feel more comfortable than staying in the shelter.” (P13, FG2/flood site)*

Similarly, participants from the earthquake expressed their concerns about the unhealthy and low-quality environment, which related to the economic condition:

*“The condition after the earthquake the village was destroyed to the same level as ground ... dusty atmosphere ... why were houses flat on the ground? Because of the construction. We are people who less fortunate, means [they were] from the middle and lower economy ... so our houses had not been plastered. Just say only semi-permanent houses.” (P7, FG1/earthquake site)*

### 3.4. Expectation four: implementation of disaster health preparedness activity

The last theme focused on the need to implement disaster health preparedness. All participants in the study have lived in disaster-prone areas for many years. Thus, the participants expected nurses, as health team members, to help them by anticipating and preparing to deal with the inevitable ‘next’ disaster. In the flood site focus group, the need to have activities related to disaster preparedness was revealed. Most participants stated that they had tried to find out the possibility of flooding during heavy rains or from the news that spread from friends and relatives:

*“... we need to prepare ourselves for evacuation, including understanding the direction of the wind, and learning from the health team how I prepare myself for evacuation regarding health issues.” (P22, FG3/flood site)*

## 4. Discussion

As described above, the survivors’ expectations on disaster nursing consisted of four main themes: i) provision of direct nursing care, ii) provision of information for access to health service, iii) provision of resources through cross-sector coordination, and iv) implementation of disaster health preparedness activity.

This study found that the survivors expect nurses to provide physical and mental health care in the shelter with a comprehensive explanation about their health. These expectations are in line with nurses’ and others’ perspectives regarding disaster nursing care [8,11]. Nurses are expected to provide both physical and mental health care, implement inter-professional collaborative work, prioritize vulnerable groups, provide a home visit to affected families, advocate for survivors to access health care, and refer survivors to health facilities as needed [2]. Moreover, survivors emphasized that they also expect that in delivering care, nurses integrate their local cultural values. This aspect of care is often missing in nurses’ competency [26]. Cultural aspects are an important feature of health care where nurses are expected to care appropriately for the individual from a range of diverse cultures. Survivors respond and recover from a disaster within the context of their cultures and beliefs; therefore a nurse’s or other carer’s failure to understand the local culture may create a sense that the often very busy and potentially stressed nurses do not care for them [26].

Survivors also expected nurses to share health care insurance information that they could receive to access health care. Based on government policy, survivors can utilize all health care facilities without charge for up to two weeks following the onset of the disaster. Unfortunately, most participants did not use the services due to ignorance regarding this emergency provision. A previous study in Indonesia highlighted that because of constraints

inhibiting access to information, many survivors did not receive the important information they needed, including details regarding accessing health services [27]. Therefore, besides focusing on survivors' health conditions, nurses should also have proper knowledge about health coverage. Nurses could communicate the information and therefore enable survivors to access health care services.

Moreover, the survivors expected that nurses could help them to get daily basic needs, find a safe place for evacuation, and maintain sanitation and a clean environment. Maintaining sanitation and a clean environment are required to prevent infectious disease outbreaks after the disaster [28]. During the acute phase, the promotion of safe food and water as well as appropriate sanitary conditions to prevent infectious diseases, together with evacuating survivors from the affected area, are additional issues perceived by nurses as a part of their roles [18].

Survivors highlighted the need to have more disaster-related health preparedness activities from nurses. Through disaster preparedness, potential victims would become more understanding and prepared to maintain their health when disaster strikes. This finding also becomes the main concern of nurses: 'how to strengthen community resilience through disaster preparedness activities?' However, their competency in the preparedness area needs to be improved first before those nurses can educate any potential disaster victims [8,29,30].

Disaster nursing is a unique nursing area where nurses are expected to be able to deliver care for various clients across different health problems, including physical and mental, and continuously across every disaster cycle. Currently, Indonesia is developing a recognized standard of disaster nursing competency to equip every nurse with necessary disaster-related competency. Efforts to develop the standard in Indonesia include integrating available guidelines or theories, expert meetings, and real-world practices from nurses' perspectives. Particular views emerged from survivors, such as cultural aspects and activities-related disaster health preparedness offered by nurses, provided valuable input identifying which areas of competency need improving.

## 5. Conclusion

Results from this study, which identified disaster survivors' views regarding emergency nursing, suggest the importance of nurses having the competence to update information regarding healthcare access; including the utilization of health insurance and demonstrating cultural sensitivity when caring for disaster survivors. Nurses are also expected to be able to train the community and family about preparedness-related activities; such as: a) giving first aid to an injured person before receiving professional help and b) how to keep the environment sufficiently clean to prevent a post-disaster outbreak or disease. Such skills would be taught in order to increase survival rates in affected communities. Besides, nurses should be educated in ways to improve their competence in implementing disaster risk reduction activities.

In a wider scope, nurses should have the ability to advocate and coordinate with the local government and other stakeholders to make sure that disaster survivors can have access to healthcare services. Rapid assessments are required to be performed continuously since the needs of survivors are changing rapidly; it is axiomatic that survivors receive immediate and appropriate treatment and that competent 'disaster' nurses are able to provide it.

This study offers valuable insights regarding survivors' expectations and views and can be used to develop the competency standard expected of and required from 'disaster' nurses, particularly in Indonesia. The results of this study also offer a resource for

countries that are currently developing disaster nurses' competencies.

## Conflicts of interest

None declared.

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## Authors' contribution

Authors' contribution was describes as follow. Herni Susanti, PhD and Achir Yani S. Hamid, DNSc conceived the study and obtained research funding. Herni Susanti, PhD, Achir Yani S. Hamid, DNSc, and Dr. Sigit Mulyono undertook data collection and analysis. Arcellia F. Putri, MSc conducted data transcription and analysis. Yudi A. Chandra, BSN undertook recruitment of key persons, transcription and data collection. Herni Susanti, PhD and Achir Yani S. Hamid, DNSc drafted the manuscript and all authors contributed substantially to its revision. Herni Susanti, PhD takes responsibility for the paper as a whole.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2019.09.001>.

## References

- [1] Daily E, Padjen P, Birnbaum M. A review of competencies developed for disaster healthcare providers: limitations of current processes and applicability. *Prehospital Disaster Med* 2010;25(5):387–95. <https://doi.org/10.1017/S1049023X00008438>.
- [2] World Health Organisation, International Council of Nurses. ICN framework of disaster nursing competencies. Geneva: ICN; 2009. Available from: [http://www.wpro.who.int/hrh/documents/icn\\_framework.pdf](http://www.wpro.who.int/hrh/documents/icn_framework.pdf).
- [3] Hutton A, Veenema TG, Gebbie K. Review of the international Council of nurses (ICN) framework of disaster nursing competencies. *Prehospital Disaster Med* 2016;31(6):680–3. Epub 09/20, <https://doi.org/10.1017/S1049023X1600100X>.
- [4] Hammad KS, Arbon P, Gebbie KM. Emergency nurses and disaster response: an exploration of South Australian emergency nurses' knowledge and perceptions of their roles in disaster response. *Australas Emerg Nurs J* 2011;14(2):87–94. <https://doi.org/10.1016/j.aenj.2010.10.002>.
- [5] Kako M, Mitani S. A literature review of disaster nursing competencies in Japanese nursing journal. *Collegian* 2010;17(4):161–73. <https://doi.org/10.1016/j.colegn.2010.09.003>.
- [6] Baack S, Alfred D. Nurses' preparedness and perceived competence in managing disasters. *J Nurs Scholarsh* 2013;45(3):281–7. <https://doi.org/10.1111/jnu.12029>.

- [7] Loke AY, Fung OW. Nurses' competencies in disaster nursing: implications for curriculum development and public health. *Int J Environ Res Public Health* 2014;11(3):3289–303. PubMed PMID: 24658409; PubMed Central PMCID: PMC3987035, <https://doi.org/10.3390/ijerph110303289>.
- [8] Veenema TG, Griffin A, Gable AR, MacIntyre L, Simons RN, Couig MP, et al. Nurses as leaders in disaster preparedness and response—a call to action. *J Nurs Scholarsh* 2016;48(2):187–200. <https://doi.org/10.1111/jnu.12198>.
- [9] Xu Y, Zeng X. Necessity for disaster-related nursing competency training of emergency nurses in China. *Int J Nurs Sci* 2016;3:198–201. <https://doi.org/10.1016/j.ijnss.2016.04.009>.
- [10] Ahayalimudin N, Osman NN. Disaster management: emergency nursing and medical personnel's knowledge, attitude and practices of the East Coast region hospitals of Malaysia. *Australas Emerg Nurs J* 2016;19(4):203–9. PubMed PMID: 27545578, <https://doi.org/10.1016/j.aenij.2016.08.001>.
- [11] Al Thobaity A, Plummer V, Williams B. What are the most common domains of the core competencies of disaster nursing? A scoping review. *Int Emerg Nurs* 2017;31:64–71. PubMed PMID: 28029612, <https://doi.org/10.1016/j.ienj.2016.10.003>.
- [12] Park HY, Kim JS. Factors influencing disaster nursing core competencies of emergency nurses. *Appl Nurs Res* 2017;37:1–5. PubMed PMID: 28985913, <https://doi.org/10.1016/j.apnr.2017.06.004>.
- [13] Varghese SB. Cultural, ethical, and spiritual implications of natural disasters from the survivors' perspective. *Crit Care Nurs Clin* 2010;22(4):515–22. <https://doi.org/10.1016/j.ccell.2010.09.005>.
- [14] Knowles A. Resilience among Japanese atomic bomb survivors. *Int Nurs Rev* 2011;58:54–60. <https://doi.org/10.1111/j.1466-7657.2010.00855.x>.
- [15] Warsini S, Buettner P, Mills J, West C, Usher K. Post-traumatic stress disorder among survivors two years after the 2010 Mount Merapi volcano eruption: a survey study. *Nurs Health Sci* 2015;17(2):173–80. PubMed PMID: 24845603, <https://doi.org/10.1111/nhs.12152>.
- [16] Williams JR, Gavin LE, Carter MW, Glass E. Client and provider perspectives on quality of care: a systematic review. *Am J Prev Med* 2015;49(2 Suppl 1): S93–106. PubMed PMID: 26190852, <https://doi.org/10.1016/j.amepre.2015.03.017>.
- [17] Badan Nasional Penanggulangan Bencana. Data informasi bencana Indonesia. Available from: <http://dibi.bnpb.go.id/dibi/>; 2016.
- [18] Putra A, Petpichetchian W, Maneewat K. Review: public health nurses' roles and competencies in disaster management Nurse Media. *J Nurs* 2011;1(1): 1–14. <https://doi.org/10.14710/nmjn.v1i1.742>.
- [19] Husna C, Hatthakit U, Chaowalit A. Emergency training, education and perceived clinical skills for tsunami care among nurses in Banda Aceh, Indonesia. *Nurse Media J Nurs* 2011;1:75–86. <https://doi.org/10.14710/nmjn.v1i1.748>.
- [20] Martono M, Nursalam N, Satino S, Efendi F, Bushy A. Indonesian nurses' perception of disaster management preparedness. *Chin J Traumatol* 2018. <https://doi.org/10.1016/j.cjtee.2018.09.002>.
- [21] Rizqillah AF, Suna J. Indonesian emergency nurses' preparedness to respond to disaster: a descriptive survey. *Australas Emerg Care* 2018;21(2):64–8. <https://doi.org/10.1016/j.auec.2018.04.001>.
- [22] Krippendorff K. *Content analysis: an introduction to its methodology*. Thousand Oaks, California: Sage; 2013.
- [23] Mezinska S, Kakuk P, Mijaljica G, Waligora M, O'Mathuna DP. Research in disaster settings: a systematic qualitative review of ethical guidelines. *BMC Med Ethics* 2016;17(1):62. PubMed PMID: 27769232; PubMed Central PMCID: PMC45073437, <https://doi.org/10.1186/s12910-016-0148-7>.
- [24] Hancock M, Amankwaa L, Revell M, Mueller D. Focus group data saturation: a new approach to data analysis. *Qual Rep* 2016;21(11):2124–30.
- [25] Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24(2):105–12. PubMed PMID: 14769454, <https://doi.org/10.1016/j.nedt.2003.10.001>.
- [26] Danna D, Pierce S, Schaubhut R, Billingsley L, Bennet M. Educating nurses to provide culturally competent care during disasters. *J Contin Educ Nurs* 2015;46(3):135–44. <https://doi.org/10.3928/00220124-20150220-18>.
- [27] Purwaningsih S, Trisnantoro L, Donna B. Evaluasi koordinasi pelayanan kesehatan lintas provinsi pada masa tanggap darurat bencana gunung merapi tahun 2010. *Jurnal Kebijakan Kesehatan Indonesia* 2014;3(1):43–51.
- [28] Jafari N, Shahsanai A, Memarzadeh M, Loghmani A. Prevention of communicable diseases after disaster: a review. *J Res Med Sci* 2011;16(7):956–62. PubMed PMID: 22279466.
- [29] Fung OW, Loke AY, Lai CK. Disaster preparedness among Hong Kong nurses. *J Adv Nurs* 2008;62(6):698–703. PubMed PMID: 18503654, <https://doi.org/10.1111/j.1365-2648.2008.04655.x>.
- [30] Sangkala MS, Gerditz MF. Disaster preparedness and learning needs among community health nurse coordinators in South Sulawesi Indonesia. *Australas Emerg Care* 2018;21(1):23–30. <https://doi.org/10.1016/j.auec.2017.11.002>.