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RESEARCH ARTICLE

Islamic-based Disaster Response Competencies: Perceptions, Roles and Barriers Perceived by Nurses in Aceh, Indonesia

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Abstract:

Introduction:

Indonesia, being a part of the Pacific "ring of fire," is prone to disasters. Several disasters occurred from 2004 to 2019, which resulted in the loss of many lives. These disasters impacted the physical, psychological, psychosocial, and spiritual conditions of survivors. Nurses are the frontline care providers who need adequate competencies to respond to disasters.

Objective:

This study aimed to explore the nurses' perception of disaster, roles, barriers, and Islamic-based nurses' competencies in managing psychological, psychosocial, and spiritual problems due to disasters in hospital settings.

Methods:

This is a qualitative study conducted in three large referral hospitals in Banda Aceh, Indonesia. Focus group discussion was conducted on 24 nurses from three hospitals using the discussion guide consisting of five open-ended questions. The data was analyzed through inductive content analysis.

Results:

The study found four themes of Islamic nurses' competencies in disaster response: 1) perception about the disaster is influenced by religiosity, belief, and values, 2) communication skills, 3) nurses' roles in disaster response consisted of disaster competencies (the use of Islamic values in managing patients' conditions, and family engagement, 4) competency barriers consisted of inadequate training, insufficient Islamic-based services, and inadequate involvement of policymakers. This study explored Islamic nurses' competencies in disaster response related perceptions about the disaster, nurses' roles, and barriers. The limitation and future of the study were also discussed.

Conclusion:

Perceptions, roles, and barriers in disaster response might influence the development of the Islamic-based nurses' competencies in care delivery.

Keywords: Islamic Competencies, Nurse, Disaster Response, Perceptions, Roles, Barriers.

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1. INTRODUCTION

Indonesia, being a part of the Pacific "ring of fire," is prone to earthquakes because it is located on the most active volcanic pathways and across several tectonic plates in the world [1, 2]. Hence, disasters caused by natural, non-natural and human factors are common in this region, threatening and disrupting humans' lives, resulting in environmental damages and loss of properties. In addition, it affects the physical, psychological, psychosocial, and spiritual conditions of the survivors [3 - 7]. Indonesia experienced 42 earthquakes from 2017 to 2018. The earthquakes and tsunamis in Lombok, Donggala-Palu, and the Sunda Strait in Banten, resulted in thousands of human casualties, loss of properties, as well as physical and psychological conditions of the affected people. The rate of occurrence of these disasters shows that there is a need for effective response measures [8]. Natural disasters,

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such as earthquakes, tsunamis, flooding, and volcanic eruptions, have frequently struck Indonesia. There have been a total of 5,405 natural disaster strikes in Indonesia within 2018-2019, with a tendency to increase annually [9].

During a disaster, nurses are usually at the frontline in emergency response, an integral component, and the largest health care providers (47.5% of the total health workers) in the health sector to caring the patients in disaster response [10, 11] The nurses play a critical role in all phases of disaster management. Their roles in such situations include providing first aid, coordination, emotional and psychological support services to the affected people [12 - 14]. Hence, the increasing rate of disasters in the last 15 years requires improvement in competencies of the nurses inadequately responding to it [15]. These studies focused on the three main constructs in disaster nursing: core competencies, nurses' roles, and barriers. However, these studies did not describe exactly Islamic nurses' core competencies in disaster response. Nurses' competencies in responding to disasters are very important, particularly in high-risk regions. The challenges encountered during the tsunami and earthquake in 2004 showed the serious need to improve the health personnel's disaster response capabilities [16]. Several studies reported low competencies of nurses both in disaster preparedness and response. Particular research revealed the inadequacy of nurses' roles and competencies in providing care for disaster survivors [7]. According to the study, 88% of the people were dissatisfied with the skills of nurses and physicians in responding to disasters [17]. The study further revealed that nurses' low competency in disaster response is due to the lack of a disaster management team and a lack of in-service training for nurses on the best practices [5, 7]. Furthermore, studies on Indonesian nurses' roles and competencies in disaster preparedness and response reported that lack of competencies for disaster management and their roles, either in the disaster preparedness phase or in giving responses in a post-disaster situation [18]. The competencies of community health nurses in disaster preparedness and response in Indonesia are also reported to be inadequate [19], where a mega-disaster in 2004 had tested the skills and the responses of nurses to patient care. A study also reported that the nurses' clinical skills were also insufficient in caring for the patient affected by the tsunami [16].

Several nurses' core competencies in disaster management have developed the related framework of nurses' disaster competencies [20]. In Indonesia, the disaster preparedness and response are regulated by Law No. 24 of 2007 on disaster management [21], the National Plan for Disaster Management 2015-2019 [22], and Guidelines for Disaster Mitigation Health Crisis Management Technicians: Indonesian guidelines for health workers in health crisis management during disasters [23]. The regulations are also referred to for the development of nurses' competencies curriculum on disaster response. Therefore, to implement these policies, the Indonesian government has authorized the Association of Indonesian Nurses Education Center (AINEC), as stipulated in the 2015 Indonesian Nurse Education Core Curriculum. Based on the curriculum, the competency of Indonesian nurses in disaster response is reflected in the 4-credit emergency nursing course, 3-credit critical nursing, and 3-credit disaster nursing, making up to 10 credits of relevant courses to prepare the core nurses' competencies in disaster response in Indonesia [24]. Although the core curriculum on disaster competency for nurses has been formulated, each region can develop and implement the curriculum following the local wisdom, belief, and religiosity.

Despite the established regulations and policies, there is lack of studies related to nurses' roles and competencies in disaster preparedness and response and is practically limited [2], particularly none of the reviewed studies addressing Islamic-based nurses' competencies in disaster in Muslim dominated countries [20, 25 - 28]. Noticing a vast Muslim population across the globe, incorporating Islamic values in public services, including in hospitals and educational institutions toward nurses' competencies during disaster response, has been gaining special attention.

Islamic competencies in disaster response refer to using Islamic values through *salat* (prayer), *dzikir (remembrance)*, Quran recitation, *salawat (salutation to the prophet of Mohammad PBUH)*, and *dua* (invocation), family engagement, and communication skills refer to the use of spiritual empowerment, such as the concept of patience in managing the patients' conditions caused by the disaster in managing psychological, psychosocial and spiritual conditions as an obligation of Muslims fellows. Beliefs and religious inclinations might determine people's perception of disasters. Research stated that beliefs and religion influence the interpretations given to disasters [29]. Considering the tsunami disaster in 2004, the Muslims believed that it was a test from God, while the Buddhists did not see it as such. Additionally, religious beliefs have been found to determine the view of natural disasters, the perceptions of disaster risk, and the importance of attitudes in responding to disasters. Subsequent research stated that both Islam and Christian recognized that religious education is the basis of spiritual understanding [30]. Islamic teaching has a significant role in satisfying the physical and spiritual needs that guide the behavior, values, social life, and meanings in human life. Spiritual needs may balance growth in life.

In the Islamic perspective, disaster is considered as a destiny from God; it helps the coping individuals recognize and overcome the conditions. Islamic-based approaches, such as *salat*, *dzikir*, Qur'an recitation, and *salawat* are Islamic nursing care delivery in managing the psychological, psychosocial, and spiritual conditions. This opinion is supported by the study [31] that stated the perception of Islam about the disaster as *Qadr*, which means "fate" or "predestination" as the concept of divine destiny found in Islamic thought. In addition, it provides positive coping as a form of finding strength in life and having a positive life perception (*shukran*-thankfulness).

Geographically, Aceh is a vulnerable area with high rates of earthquakes and tsunamis. The province of Aceh has the highest number of Muslims in Indonesia, 98.2% of its population. Consequently, Islamic law is being observed in almost all community aspects since 2000, including in public services, such as hospitals. The basic implementation of Islamic law refers to the Law of the Republic of Indonesia No. 11 of 2006 concerning the Government of Aceh Law (UUPA) [32]. Additionally, Aceh has adopted Islamic law in accordance

with regulation No. 5 of 2000 on the implementation of Islamic law, strengthened by the Qanun of Nanggroe Aceh Darussalam Province No. 11 of 2002, and UUPA No. 11 of 2006 on the government of Aceh. These regulations require the implementation of sharia (Islamic law), including in public services, such as hospitals and educational institutions. Therefore, the purpose of this study is to examine the Islamic-based nurses' competencies in disaster response. For the aforementioned reasons, educational institutions, including nursing schools, have the authority to adopt and develop the core curriculum based on Islamic values. Moreover, the curriculums must be locally contextualized with the values, culture, and beliefs of the Aceh community. Sharia-based services in predominantly Muslim countries have been regulated by the local government [33]. The incorporation of Islamic values in the patient care delivery has been reported to positively affect the patients in calming them, accepting their pain, decreasing anxiety, and reducing the post-disaster/injuries pain [34].

2. METHODS

2.1. Study Design

This is a qualitative study conducted to explore perceptions, roles, and barriers to Islamic competencies in disaster response. The steps of the study are related to the qualitative concept [35]. The need assessment was carried out through literature study and observation, while the data collection was conducted through focus group discussions (FGDs), which is consisted of three groups of nurses for three sessions employing inductive content analysis [36, 37]. FGDs display a social context-exploring how people talk about an issue, creative thinking and solutions would be illuminated by the display of social norms, and some common background related to the research topic could be discussed [38]. It also helps participants reflect their minds, perceptions, and behaviors through activity-oriented questions [39]. Inductive content analysis is used to determine the presence of certain words, themes, or concepts, and an autonomous method at various levels of abstraction and interpretation in qualitative data [37]. Each session took around 50-60 minutes for the respective groups, guided by five opened-ended questions.

2.2. Settings and Participants

2.2.1. The Sampling

The study involved the nurses from three large referral hospitals in Banda Aceh, and the participants were selected through a representative sampling method [36]. To obtain varied and rich data, 24 participants (18 females and 6 males) were selected representatively from each ward/department. The sample variations were sought based on age, gender, religion, educational level, working experience, and clinical experience in disaster response. The selection was conducted by a member of this research group familiar with the hospital (CH), altogether with the nurse managers. The population included the nurses who worked in four wards/departments: 1) Emergency Department (EDs), 2) Intensive Care, 3) Medical Ward, and 4) Surgical Ward. The reasons for selecting nurses in the wards are as follows: 1) they are the first point of call for patients who have been traumatized by the disaster, 2) they receive and provide care for the patients, and 3) they are nurses with adequate competencies in disaster management.

Participants were selected according to the following inclusion criteria: 1) nurses who have been working for at least two years, 2) hold a minimum of diploma educational level, 3) not currently on annual leave or study assignments, 4) had clinically experienced in disaster response, and 5) had been disaster survivors. The participants were between 23 and 52-year-old with working experience ranged from 3 to 29 years. Out of 24 participants, 13 of them held a bachelor's degree. All of the participants embraced Islam as their religion. The participants were informed about the study objective and procedure. The participants were given all the required information about the research and willingly signed the written consent before commencing the study.

2.3. Ethical Considerations

This research was conducted with respect to the ethical principles in nursing research. It was approved after the consideration by the Provincial Hospital Ethics Committee of Dr. Zainoel Abidin in Banda Aceh and also accepted by two other hospitals, with the approval number 1171012P and the date of approval January 25, 2019.

2.4. Data Collection

The researchers developed the instrument through literature review. Data collection was conducted in January 2019 in the three hospitals in Banda Aceh. FGDs were conducted in these three hospitals (FGDs A, B, C), and each FGDs involved eight nurses for three cycles to obtain adequate data saturation. The researchers tried to build trust relationships with the participants before the FGDs. The discussion guide, consisting of five questions, was created and led by a researcher (CH) and assisted by two research assistants in FGDs. The FGDs began by asking questions were: 1) "What do you think about disasters from an Islamic perspective?", 2) "Why are disasters response competencies needed for managing psychological, psychosocial and spiritual conditions of the survivors?", 3) "What do you think about the Islamic-based competency in disaster response for the nurses in managing psychological, psychosocial and spiritual conditions?", 4) "What are references may be used to develop Islamic-based disaster response competencies for nurses?", and followed by 5) "What about the policies/regulations governing Islamic-based disaster response competencies for nurses in managing psychological, psychosocial and spiritual conditions in this hospital?". All the participants answered the questions based on the results of data analysis. Then, the responses were classified into the unit of analysis to determine the condensed meaning unit, the code, sub-theme, and theme [40, 41].

All of the researchers are Acehnese Muslims. The three researchers (CH, HK, TT) are senior clinical nurses, and the other one (MY) is a senior Islamic scholar in Aceh, Indonesia. The discussion guide has passed the credibility test with the help of three colleagues who are experts in a qualitative study from the Nursing Faculty of Universitas Syiah Kuala, Banda

Aceh. The guidelines for the FGDs were developed by the researchers, and the pilot testing was conducted by the first author with some professionals listening to lead the questions. The sequence of the questions was re-arranged, however, the contents were not changed. The FGDs activities were begun with questions posed to the participants on Islamic-based nurses' competencies in disaster response, led by a moderator (CH) and assisted by two research assistants who acted as a recorder (RM) and a facilitator (FY). Before conducting the FGDs, the researchers informed all participants that they had equal opportunity to express their opinions. They were asked to give their opinions and perceptions about disasters and Islamic-based nurses' competencies in disaster response. The data was recorded using audio-recorders and verbatim transcription was carried out by the professional researchers and recorded into the Microsoft Excel sheet. The data were analyzed using meaning units to determine sub-themes and themes. Data were analyzed based on the content of the research questions on topics, and irrelevant data were ruled out.

The trustworthiness was established by the member checking the data by involving the participants to improve the data credibility. The participants provided feedback on the data analysis consists of the data review, analytic categories, interpretations, and conclusions tested. The participant delivered some feedback on the analyzed data, then match it with condensing data. Three colleagues from the Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh (SRJ, EW, and SSS), experts in a qualitative study, examine the data confirmability. The experts and researchers repeatedly read the transcripts to gain an overall understanding. Then, the data were fragmented into the meaning units and labeled with a code.

2.5. Data Analysis

FGDs were conducted for three cycles with five open-ended questions concerning Islamic-based nurses' competencies in disaster response. The FGDs were analyzed with inductive content analysis. Data saturation was obtained after gaining the complete, profound, and similar data with the previous data of the participants, and no new information or themes were observed in the data (point of theoretical saturation). The data transcripts were reviewed several times by the authors (CH, MY, HK, and TT) to ensure the overall understanding. Meaning units describing Islamic-based nurses' competencies in disaster response were identified, condensed, and independently labeled with various codes obtaining a general sense, as shown in Table **1**. During the analysis, the authors explored the meaning of the words and events that took place in the FGDs sessions. Every word and combination of words was manually extracted from the data, and the data analysis process was discussed within the research team to maintain the consistency of the whole process. The codes were then compiled and formulated sequentially into sub-themes and themes [41, 42]. The results of the data transcript were shown to participants, and they provided feedback on data analysis, including categories, interpretations, and conclusions. All participants agreed to the sub-themes and themes as the results of the study. The four main themes that appeared in the analysis were then translated into English.

3. RESULTS

The results of demographic data are presented in Table **2**.

Table 1. Examples of the analysis of nurses' competencies in disaster response (n=24).

Meaning unit	Code	Sub-theme	Theme
I think that disaster occurred as God's will for humanity… (participant 3)	Disaster as a fate from God	Religiosity	Perception about disaster
I tried to overcome psycho-spiritual conditions due to disasters through dua, dzikir, Quran recitation, salat, and salawat (*participant 10*)	*Salat* (prayer), *dua* (invocation), *dzikir,* Quran recitation, and *salawat*	Embracing Islamic values	Nurses' roles in disaster response

Table 2. Demographic data of participants (n=24).

Characteristics	N	%
Age (year) M (SD)	32.9	(5.03)
Gender Female Male	18 6	75 25
Marital status Marriage Single	22 2	91.6 8.4
Religion Islam	24	100
Educational level Diploma Bachelor	11 13	45.9 54.1
Working experience (year) M (SD)	6.5	(3.09)
Clinical experience in disaster response/disaster survivors	24	100

Table 3. Islamic-based nurses' competencies in disaster response (n= 24).

Complex nurses' competencies	
Sub theme	Theme
Religiosity, belief and value: -Disaster as a fate from God -Disaster as a test of faith (*Iman*) -Disaster as a warning from God	Perception about disaster
Social interaction Nurses as patient's advisor The use of Islamic values in managing patients' conditions Family engagement	Communication skills Nurses' roles in disaster response
Inadequate disaster training Lack of competency in Islamic-based services Inadequate involvement of policymakers	Competency barriers

3.1. Theme and Sub-theme of Islamic Nurses' Competencies

The results categorized the competencies of the nurses in disaster response into four themes: 1) perception about the disaster, 2) communication skills, 3) nurses' roles in disaster response, 4) and competency barriers. Table **3** presents the sub-themes and themes of Islamic-based nurses' competencies in disaster response.

3.2. Perception of Disaster

3.2.1. Religiosity

Religiosity is associated with spiritual practices related to beliefs, values, and laws. Religiosity is the most important vigor in human life that influences the individual's attitudes and actions. Religiosity also provides social strengths and influence social and community life. Belief and values are the components that form attitudes and behaviors for social interactions [43]. Religiosity, beliefs, and values influence perceptions about disasters. In this study, the nurses' perception about the disaster is defined as a will, test, and rebuke from God. This is in line with the Islamic perspective that disaster is the will and a test from God. Although disasters cause injury, loss of lives and damages to properties, from an Islamic perspective and nurses' values and beliefs, disasters are predestined by God to test a man's fortitude before moving to 'the next level'. This is shown from participants' opinions that:

"…in Islam, we know that disasters are God's will for humanity to remind us about God's rules because we had many sins… (participant 3)".

3.2.2. Belief

Religious perception helps the nurses in providing the required intervention to disaster survivors since it is seen as God's will and fate, which must be endured with courage and strength. In addition, disasters are part of destiny; they are also seen as a test from God, as expressed by one of the participants, as follows.

"*We know that disaster is a test from the God that must be endured because God tests according to the ability of the people... (participant 6)".*

3.2.3. Values

The nurses also perceived disasters as tests needed to reach a higher level in life (based on Islamic values). This is seen from the statement of the participant below.

"...In Islamic values we think that disaster is a warning and a reminder for us to return to God because all the time we might be a little far from the teachings that He recommends (*participant* 20)".

This perception reflects religiosity, belief, and values shared by participants. Religiosity is a spiritual expression of an individual related to the system of beliefs, values, and laws applied within the society in performing religious activities determined by the authority.

3.3. Communication Skills

3.3.1. Social Interaction

The themes of communication skills in disaster response refer to the social interaction and nurses as the patient's advisor. Communication skills refer to developing social interaction and therapeutic communication between nurses, patients, and families that nurses must master in caring for the disaster survivors. It has a way of providing some relief to the patients. This is supported by the following quote.

"How the nurse does the communication in a care delivery, gives patients peace of mind to overcome the problem all the time… (participant 3)".

3.3.2. Nurses as Patient's Advisor

In addition, with the communications skills, the nurses are expected to be able to act as an advisor to the patient, providing counseling and advice and strengthening the patient's spiritual condition, such as through the concept of patience and sincerity in facing the impact of the disaster, as quoted from one of the participants.

"... There are counseling and motivation (from nurses) to provide peace of mind.... (it will be) a happiness if there are nurses who can provide religious advice because it may handle the problems...it's OK, this disaster is (a test) from God, hopefully (the patient) can be strong and patient ... (Participant 7)".

3.4. The Roles of the Nurses in Disaster Response

3.4.1. The use of Islamic Values in Managing Patients' Conditions

Several nurses' roles in disaster response related to Islamic-based competencies were obtained, namely the use of Islamic values in managing patients' conditions, and family engagement in managing the disaster survivors. In addition, the nurses reported the use of Islamic values in managing patients' conditions, mainly the psychological, psychosocial, and spiritual conditions post-disaster. Islamic values approach might treat the patient's condition through *salat* (prayer), *dzikir (remembrance)*, *Quran recitation*, *dua* (invocation), and *salawat (salutation upon the prophet of Mohammad PBUH)*. Islamic values may be taught or practiced by the nurses for patients with psycho-social-spiritual conditions caused by disasters. This is shown from the following quote:

"*I tried overcome psycho-spiritual problems due to disasters of the survivors through dua, dzikir, Quran recitation, salat, and salawat, which was initially taught by a nurse, then the survivors practiced it…* (*participant 10*)*"*.

Salat is a prayer performed by the Muslim as an obligation to God, *salawat* is a salutation or prayer to the Prophet Mohammad Peace Be Upon Him (PBUH), and *dzikir* is an Islamic meditation to remember God.

Disaster competency related to family engagement is provided by the family members or any close relatives for the patients to accept their conditions (*ridha*), be able to adapt and be positive in overcoming the situations. From an Islamic perspective, it is an obligation among Muslims to get the family engaged in helping the patients/disaster survivors, as encouraged in the Qur'an and hadiths. Islam suggests mutual encouragement and paying a visit to a patient/sick person as part of worship, as taught by the prophet Mohammad PBUH.

3.4.2. Family Engagement

Furthermore, in Islam, the nurses are expected to advise the family to avoid doing immoral actions and do good things by helping others. Through Islamic teaching, nurses may also educate the patients, family, and relatives that each difficulty always has an end and comes with ease, as stated in Quran Surah Ash-Sharh: 5: "*For indeed, with hardship [will be] ease*" (Al-Quran). This is supported by the participants, expressed as follows.

"*Nurses as caliph (khalifah) or leader in disaster, managing anxiety, distress ... not only treat wounds and pain but also as spiritual motivators" (participant 1, 6).*

Also, this is exemplified by the following quote:

"The nurses must involve the patients' families in the healing process because the family is the closest person to support survivors when there is a problem… (participant 14)".

3.5. Competency Barriers of Nurses

3.5.1. Inadequate Disaster Training

Competency barriers are the obstacles to the development of nurses' competencies in disaster response. The competency barriers in this study include inadequate disaster training, lack of competency in Islamic-based services, and inadequate involvement of policymakers. Inadequate disaster training refers to the lack and discontinuity of training in disaster response competencies, such as disaster triage, first aid, trauma healing, psychological, psychosocial, and spiritual Islamic-based services. This is reflected through the following quote of one of the participants.

"In my opinion, nurses' competencies are still insufficient in how they respond to disaster and handle survivors in emergencies… (participant 15)".

The subtheme of inadequate disaster training in disaster response refers to the discontinued emergency training in the hospital and the lack of disaster competencies training for nurses. The disaster training covers basic life support, basic trauma and cardiac life support, disaster triage, psychological, psychosocial, and spiritual care conditions, all needed during a disaster response. Inadequate disaster training is shown through the following responses.

"*Nurses absolutely need training for basic life support, basic trauma and cardiac life support, disaster triage, psychological, psychosocial and spiritual care for managing disaster survivors (participant 9)".*

3.5.2. Lack of Competency in Islamic-based Services

The lack of competency in Islamic-based services refers to the inadequate competency of nurses in providing Islamic-based services to disaster survivors. In fact, this was a problem at the three hospitals despite having implemented Sharia rules since 2015. This is supported by the following statement.

"We have an Islamic services unit in the hospital to handle affected patients due to a disaster, however, the nurses have not mastered and understood some verses (prayer) used in the services… currently, Islamic-based services were carried out by the Islamic scholars invited in the hospitals (participant 16)".

3.5.3. Inadequate Involvement of Policymakers

Inadequate involvement of policymakers is also identified as barriers to the development of the nurses' competencies in disaster response. The involvement of policymakers includes the support received in the form of guidance, hospital policies, and standard operating procedure (SOP) in managing the patient's conditions, as shown in the following quote.

"*…We already have a standard operating procedure (SOP) to support services to disaster survivors in a general term, but there is nothing specifically available for* managing *psychological, psychosocial and spiritual conditions in the hospitals… (participant 14)".*

4. DISCUSSION

This study explored three groups of nurses in three hospitals about their perception, roles, and barriers to Islamic nurses' competencies in disaster response. The nurses' perceptions of disasters in this study are the same as those with

Islamic religious background, recognizing disasters as God's will, as written in "*Lauhul Mahfudz*", God's written records of all the events in the universe. The perception of disasters is influenced by spiritual expression concerning beliefs, values, and laws applied in terms of religion. Religiosity is the level of one's conception and commitment to a particular religion, which generally influence one's perception. From a Muslim point of view, religiosity is recognized from the knowledge, beliefs, implementation, and appreciation of Islam. This is in line with the assertion in research that religiosity has to do with concepts involving cognitive, emotional, motivational, and behavioral aspects [44]. Religiosity is also the level of obedience in the practice of beliefs established by religious institutions, but spirituality is the process by which one seeks and practices religious teachings.

The belief system of an individual as well as the ability to act, determine how the person interprets disaster. A previous study argued that beliefs and religion influence the interpretations of the disasters, and the Muslims believe and are more adherent that the 2004 tsunami was a test from God [29]. Furthermore, the research results stated that the 2004 earthquake and tsunami was a warning from God, and most respondents believed that through praying and obedience to God (*Taqwa*), such disasters might be properly handled [45]. Almost all the respondents perceived the tsunami as God's will. In addition, the disaster was perceived as a test from God. According to research, the perception of tests in Islam is as distress, narrowness, happiness, and sustenance [46]. Also, God tests humans in the form of disasters in order to be more patient.

The nurses' perception of disasters as a warning from God was based on the fact that many people commit sins, immoralities, and mistakes. Hence, they see disasters as a form of rebuke from God, which is inseparable from the beliefs and values. Additionally, research stated that value is a set of principles and rules that help in decision-making or references in determining actions [47]. The nurses' perception is strengthened by the revelation of a study that God rebukes using several disasters to get humans closer and remember Him [48]. In Islamic terms, this kind of rebuke is known as *istidrâj*. Religious values and beliefs provide a deep sense of purpose and meaning in life. People believed that God offers hopes and solutions during the period of adversity and suffering [48]. A study also mentioned that religious/spiritual struggle positively affects stress, spiritual growth, open-mindedness, and lower levels of prejudice in life [49].

The participants also expressed the challenges they faced in employing Islamic-based nurses' competencies in disaster response regarding the nurses' communication skills. The disasters could result in psychological conditions that could be short or long term, such as fear, anxiety, guilt, depression, symptoms of somatic disorders, emotionally unstable, and post-traumatic stress disorder (PTSD). The most common psychopathology effect is caused by PTSD, ranging from 1.3% to 22.0% of the disaster survivors [50, 51]. Communication skills are essential in disaster response, especially in maintaining the interaction with the patients and their families in various challenging situations, where the nurse has to act as an advisor. Communication skills revolve around one's sensitivity to verbal and nonverbal messages, effective listening, and response [52]. It includes therapeutic communication, patience, understanding the patients' characters, and several attitudes that support nonverbal messages, such as active listening, empathy, calmness, caring, and self-control. Empathy is the ability to put oneself in other people's place to see from that same perspective [53]. In disaster response, the nurses' empathy helps in ensuring a good relationship with the patients. The result of this study is in line with research, stating that interventions for injury patients must be available in monitoring their psychological conditions, including 1) patient-centered communication, 2) open versus closed questions, and 3) good listening skills [54].

Communication skills are essential in providing quality care to patients. This is supported by the following quote "Communication becomes important in caring for disaster survivors, the nurses must be therapeutic, patients usually need support from nurses to discuss and express their complaints and feelings (participant 17)". Various patients have complained about communication skills in emergency and disaster services. This is supported by the result of the study explaining that most of the complaints from patients are a result of communication problems rather than poor medical services [52]. The study also reported that 37.7% of patients' complaints were related to behaviors, while 11.5% were related to poor communication. The main principle in Islamic-based communication skills is teaching the concept of patience for the disaster survivors in managing several conditions. In the Islamic perspective, patience is the toughness of the heart in bearing the difficulties of life given by God. This opinion is supported by research defining patience as the ability to control emotions without complaining while facing life's trials and fortitude in managing disaster [55]. The concept of patience must be taught to patients as part of nurses' communication skills to properly cope with the effects of the disaster by accepting it (*ridha*).

Another perceptions and roles discussed in the groups were the roles of the nurses in disaster response. The role of the nurses regarding disaster response is a function of their level of competence. In the study, nurses' roles in disaster response consist of 1) the use of Islamic values in managing patients' conditions, such as *salat, dzikir,* Quran recitation, *salawat,* and *dua*, and 2) family engagement. Specific issues concerning nurses' roles in disaster response seriously mentioned in this study are the need to embrace Islamic values in providing care for disaster survivors, especially while managing psychological, psychosocial, and spiritual conditions. Research stated that these conditions caused by disasters might result in feelings of guilt, depression, anxiety, sadness, helplessness, hopelessness, depression, post-traumatic stress disorder, and other health conditions [56]. The interventions needed in overcoming these conditions using Islamic values include *salat*, *dzikir*, Quran recitation, *salawat*, *dua*, and trusting God during the healing process. Several studies have reported that embracing Islamic values are effective in overcoming psychological conditions among disaster survivors. For example, participant (1) said: "The patient was struggling in accepting the condition, thereby struggling and screaming,

after an effort was made in teaching some prayers and Quran recitation to remember God, the patient finally calmed down". In the Islamic perspective, *salat*, *dzikir*, Quran recitation, and *salawat* are rewarding practices that provide a calmness to physical, psychological, and spiritual conditions. These practices also help in remembering and drawing closer to God. Spiritual values are seen as the spirit of life, the motivating force for individuals to achieve feats, and can be built through the environment [57].

Several studies have established that *dzikir* reduces patients' anxieties in both acute and chronic disasters. This is in line with some research results revealing that anxiety and pain may be reduced by religious practices, such as *dzikir* and listening to the Quran from the audio recorder (*murottal*) [34, 58 - 60]. Patients who routinely practice *dzikir* always have peace of mind and lesser stress. *Dzikir* meditation and *murottal* are considered nursing interventions in reducing pain and anxiety levels during emotional and psychological conditions.

Additionally, *salat* is obligatory worship, performed by a Muslim. During *salat*, one prays and recites the Quran, which provides reinforcement, peace of mind, and patience towards the disaster. This opinion is reinforced by a study stating that *salat* is a ritual prayer for Muslims to communicate with God and perform some acts of purity [57]. The implementation of Islamic practices and values are part of nurses' roles. The results of this study are also in line with the statements in some research that religion and spirituality help in dealing with psycho-trauma [56, 61]. Spirituality and religiosity play some vital roles to disaster survivors in expressing their trust in God. Both can be integrated into clinical practices, such as in emergencies and disaster, and could further be used for personal psychological and spiritual growth. Some also believe that religious treatment plays a significant role in the overall mental health and well-being of patients during disaster response.

Furthermore, interventions to psychological and spiritual conditions could result from the recitation of the Quran. People who recite it are always rewarded. It is also a guideline for life, and "medicine (*syifaa*)" that gives calmness and patience to the soul. This is in line with a study arguing that the Quran guides humans to find solutions in healing [62]. The focus is on obtaining solutions through action, rather than blindly following spiritual precepts alone. The Quran is the best guide on family issues and social disturbances. Spiritual approaches with the Quranic recitation can calm patients with various conditions due to disasters. Also, *salawat* is an Islamic value with great importance. It is an Arabic word that means worship, prayer, honor, asking for the blessing and well-being, mercy from God, or giving virtue to those who read the Quran. *Salawat* also means salutation and prayer for Prophet Mohammad PBUH to receive a reward, grace, and welfare from God as the manifestation of love and respect for him. Implementation of Islamic values in disaster response might positively affect the care delivery of the patients. The results of the study supported by some quotes from the participants (p1, p3, p7, p16, p17, p22, p24) that said: "These Islamic values might provide enthusiasm, life expectancy, positive thinking, patience, sincerity and accept the disaster as a test from God".

In addition, family engagement involves providing physical, psychological, psychosocial, and spiritual support to disaster survivors. This support is facilitated by the nurses in providing care for the patients. Based on the FGDs, the nurses stated the need to involve family members and close relatives in patients' care, where the nurses act as facilitators, advocates, and educators, directing the families on how best to provide motivation and other support systems to the patients. Several studies have reported the positive influence of family engagement in reducing psychological conditions, such as PTSD. According to this study, the utilization of psychological support reduces the severity of the disaster [63]. The nurses involved in disaster response are required to provide psychosocial care, requiring awareness in mental health and first aid as well as the engagement of the patients' family members [4]. Additionally, some studies revealed that support groups have a way of making the psychological conditions among disaster survivors less severe through supportive counseling by nurses and family engagement [64, 65]. A study also explained that psychosocial support promotes patients' ability to positively respond to disasters and manage the crisis [66].

Islamic competencies in disaster response refer to 1) the nurses' perception of the disaster, influenced by religiosity, belief, and value, 2) communication skill refers to the use of spiritual empowerment, such as the concept of patience in managing the patients' conditions caused by the disaster. From an Islamic perspective, the concept of patience has three meanings: patiently observing obedience, patiently avoiding immorality, and patiently facing tests/illnesses/disasters, 3) nurses have the role in managing patients' conditions through *salat*, *dzikir*, Quran recitation, *salawat*, and *dua*, and family engagement in managing psychological, psychosocial and spiritual conditions during disaster response as an obligation of Muslims fellows.

Lastly, nurses' competencies barriers in performing Islamic disaster response competencies were also discussed in the groups. Competencies barriers are obstacles encountered in developing the ability needed to carry out a job with respect to knowledge and skills. Several factors affect competencies: 1) beliefs and values, 2) skills, 3) experience, 4) personality characteristics, 5) motivation, 6) emotional issues, 7) intellectual abilities, and 8) organizational culture [67]. However, an organizational culture related to barriers in developing self-competencies has the most important effects, such as organizational philosophy (mission-vision, and organizational values), habits and procedures, and commitment to training and human resource development. Based on the FGDs, various sub-themes were obtained concerning the competency barriers, and these include; 1) inadequate training, 2) insufficient Islamic-based services, and 3) inadequate involvement of policy-makers.

The lack of Islamic competencies is not only found during in-service training but also in pre-service training. The nurses mentioned that their lack of skills in Islamic-based competencies for disaster response is due to the lack and the discontinuity of the related training or educational programs and inadequate support of the policymakers. Disaster

competency training is an essential part that was extensively considered in FGDs. Training needs include disaster triage, life support, first aid, and trauma healing. According to those nurses working in the three hospitals, health personnel in the Emergency Department and Intensive Care Units were provided with triage, first aid, and life support training. However, trauma healing training needed for managing psychological, psychosocial, and spiritual conditions during disaster periods was not conducted at all. The inadequate training is simply the lack or discontinuity of disaster training and educational program for all the nurses regarding disaster triage, life support, first aid, disaster management, trauma healing, and Islamic-based psychological, psychosocial, and spiritual care training. Nurses in the emergency and intensive care units had received training on basic/trauma life support, while they have received inadequate training on disaster management and drills. The results of this study are supported by some studies explaining that nurses' knowledge and skills in disaster response are unsatisfactory, hence, disaster training programs are needed to improve the efficiency of the nurses during their rescue operations [68, 69]. Likewise, the results of this study are supported by some research concluding that nurses' competencies are inadequate, and there are major gaps that needed to be closed concerning the provision of care during disasters [68 - 70].

Islamic-based services such as *salat*, *dzikir*, Quran recitation, *salawa*t, and *dua* are the main Islamic values in disaster response with respect to managing the patients particularly with psychological, psychosocial, and spiritual conditions. The results showed the hospitals had implemented Sharia laws in delivering hospital services, Islamic service units, and several general standard operating procedures (SOP) in providing Islamic-based services. However, the available Islamic Service Units are still coordinated entirely by Islamic scholars (*ustadz/ustadzah*), hence, the nurses have inadequate abilities and competencies in providing Islamic-based services. Research showed that Islamic-based services by using Islamic values, such as *salat*, the recitation of Quran, *dzikir*, and *dua,* have a positive effect in reducing patient anxiety, increasing patients' awareness and calming the patients [71]. To overcome the psychological and spiritual conditions of patients during disasters, nurses need to have spiritual competencies, especially in Islamic values based on the culture and religion adopted by the majority of the patients. This study agrees with a study stating that nurses are willing to learn about Muslim culture and Islamic services to have greater cultural understanding and respect to improve health care delivery [72].

The involvement of policymakers is highly required in improving organizational culture concerning the preparation of standard operating procedures (SOPs) and policies to enhance Islamic-based services through training and development of human resources. Inadequate involvement of the policymakers in creating the relevant SOPs affect the general management of the disaster conditions and result in insufficient Islamic-based services. The provision and involvement of policymakers in hospitals were insufficient to improve the organizational culture associated with reducing competency barriers for nurses and increasing the resources in disaster response competencies. The results of this study are supported by research reporting that there are institutional gaps and regulatory weaknesses in disaster preparedness and response, thus, the involvement of policymakers is vital in creating policies in responding to disasters [73].

5. LIMITATIONS

The study participants were selected from three hospitals in the Province of Aceh, Indonesia. The province has implemented sharia law in health services since 2011. The study only explored the Islamic-based nurses' competencies in disaster response, particularly in managing psychological, psychosocial, and spiritual conditions. Therefore, the results of this study may not be generalized to non-Islamic-based hospitals, both in Indonesia and the world.

CONCLUSION

The study results may be useful for planning and preparation phases of disaster management, for example, to provide feedback for stakeholders and policymakers to develop regulations related to Islamic-based nurses' competencies in disaster response to the managing of psychological, psycho-social, and spiritual conditions. The policies and regulations may become guidelines in improving the nurses' competencies of Islamic-based disaster response in the development of policies, guidelines, standard operating procedures (SOPs) for nursing intervention, training, and educational programs for emergency and disaster preparedness and response, and public health services. The study results may also be used in the development of an Islamic-based disaster nursing curriculum in nursing education. For the recovery phase of disaster management, the use of Islamic-based approaches, such as *salat* (prayer), *dzikir (remembrance)*, Quran recitation, *salawat* (salutation for Prophet Mohammad PBUH), and *dua* (invocation) to reduce the post-traumatic stress due to disaster.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved after consideration by the Provincial Hospital Ethics Committee of Dr. Zainoel Abidin in Banda Aceh, Indonesia and this was also accepted by two other hospitals with number 1171012P, the date of approval January 25, 2019.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures were followed in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

AVAILABILITY OF DATA AND MATERIALS

The data used to support the findings of this study are included in the article and may also be obtained from the corresponding author [C.H] upon request.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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