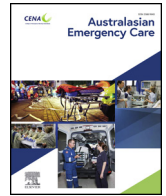




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Research paper

Disaster preparedness and learning needs among community health nurse coordinators in South Sulawesi Indonesia

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ABSTRACT

Background: The number of natural disasters occurring worldwide has increased, including Indonesia, a country that continues to experience natural disasters of varying level of severity. Despite this evidence, limited information is available about nurses' disaster preparedness in Indonesia particularly in community settings. This study aims to identify the current level of disaster preparedness and learning needs for managing natural disasters as perceived by community health nurse (CHN) coordinators who are working in community health settings in South Sulawesi, Indonesia.

Methods: This study used a descriptive study design. A self-administered survey, the Disaster Preparedness Evaluation Tools (DPET[®]) was utilized to determine the current levels of disaster preparedness and management of the CHN coordinators. In addition, structured questions were used to identify learning needs. It was distributed to 254 CHN coordinators working in community health settings in South Sulawesi Province, Indonesia.

Results: In total 214 CHN coordinators completed the survey. There were around 6.5% respondents perceived their current disaster preparedness as weak; 84.6% moderate; and 8.9% rated their preparedness as strong. Around one-third of the participants considered frequent disaster drills as the best learning method to achieve effective disaster preparedness.

Conclusion: Although overall disaster preparedness levels of the CHN coordinators in South Sulawesi province Indonesia were moderate, continuing disaster training that integrates CHN coordinators specific learning needs is still required to achieve effective disaster preparedness and management in community levels.

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Introduction

Disaster is a worldwide issue with unpredictable impact especially for those communities affected. According to the World Disasters Report from the International Federation of Red Cross and Red Crescent Societies [1], within the period 1997–2006, disaster incidences increased around 60% and the number of reported deaths due to the hazards doubled to over 1.2 million when compared to the previous decade. During the same period, it was reported that the average number of people affected by disasters was close to 270 million, an annual increase of around 17%. The economic impact of natural disasters is estimated to be around US\$

41.5 billion, and in 2009 that contributed more than 73% of the total reported damages caused by all disasters [2]. Indeed, natural disasters account for the majority of the impacts of disasters of any types [1].

Indonesia is a country that is prone to natural disasters and has experienced numerous events of differing levels of severity over the last decade. The Asia Pacific Disaster Report 2010 ranked Indonesia by the number of disasters as being fourth highest among Asia Pacific countries [3]. Indonesia is also ranked second highest by number of deaths (191,164) from disasters and it is estimated that approximately 18 million people have been negatively affected by disasters for the period 1980–2009 [2–4].

South Sulawesi Province is situated in the middle region of Indonesia. It has experienced disasters such as flood, landslide, storm and fire [5]. Although those were not considerably large scale disasters compared to the incidences that have occurred in Java and Sumatera islands, the Indonesian National Board for Disaster Management [6] has categorized half of the districts in South Sulawesi Province as high prone level areas to disaster inci-

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dence. Therefore comprehensive multi-hazard and risk reduction strategies are imperative and should involve all parties including nurses who directly engage with community [7–10].

Community Health Nurses (CHNs) are one of the largest specialist groups working in community health centers who are positioned to provide primary health care including in response to disasters [11]. A review by Putra, Petpichetchian and Maneewat [12] found that CHNs hold major roles in providing health care for communities during all stages of disaster including preparedness, mitigation, response and recovery. In addition, this review also suggested that CHNs need to assure that they are ready for disaster occurrences by understanding the scope of their responsibilities and the competencies required. In Indonesia, Community Health Nurse (CHN) Coordinator is a nurse who is responsible for managing and coordinating community health nursing programs in community settings [13].

Effective disaster preparedness is important in determining successful disaster management [14]. All potentially participating disaster teams including CHNs are expected to be well-prepared and fully understand their role before participating in a real disaster [11]. Al Khalailieh et al. [15], conducted a cross-sectional survey of 512 nurses in Jordan to assess the RNs' perceptions about their levels of disaster preparedness found that more than half of the participants (65%) rated their current level of disaster preparedness as weak. Similar results were also found by Fung et al. [16], who conducted a survey of 164 RNs studying in the master degree program in Hong Kong. A qualitative study by Yang et al. [17], of ten RNs who had participated in an earthquake response in China also indicates that nurses are not adequately prepared for disaster and need continuing effective disaster preparedness and management programs to improve their preparedness level. Those findings highlight the importance of determining nurses' current level of preparedness to facilitate the development of the suitable educational program based of their learning needs [15].

Aims

This study aimed to identify the current levels of knowledge, skills and preparedness for managing natural disasters as perceived by CHN coordinators working in community health settings in South Sulawesi. Further, the research aimed to define learning needs to knowledge development and clinical decision making skills in disaster preparedness and management.

Methods

Study design

This study used a cross-sectional survey design to measure the perceived current levels of knowledge, skill and preparedness for disaster among CHN coordinators and to define their learning needs for effective disaster preparedness and management.

Study setting and period

This study was conducted in South Sulawesi Province Indonesia. It included community health centers [18] situated in 24 cities/districts in South Sulawesi Province where CHN coordinators practice. Data collection was conducted by lead author from September to October 2011.

Population and sampling method

There are 425 CHN coordinators in South Sulawesi, 24 are district coordinators and 401 are community health center coordinators that are distributed across 24 cities/districts in South

Sulawesi Province [19]. Based upon a precision-based sample size calculation of 5% significance and 3% precision, a total of 254 CHN coordinators were invited to participate by way of consecutive sampling. The precision-based sampling approach allowed for a margin of 20% incomplete or unreturned surveys [20].

The inclusion criteria for this study were:

- i) At least 2 years' experience as a Registered Nurse.
- ii) Working as a CHN coordinator.
- iii) Hold an educational background of at least a three year diploma in nursing.

The exclusion criteria were:

- i) Incomplete survey
- ii) Refuse to participate in this study

Recruitment

The identification, selection and recruitment of participants were carried out by the research team in two ways: via international seminar and workshop of community health nursing organized by Nursing Study Program of Hasanuddin University, Provincial Health Office of South Sulawesi and University of Hyogo Japan on 13–14 September 2011; and direct approach achieved by visiting the health centers where the CHN coordinators practice. An invitation to participate in this study along with the survey was distributed before the seminar/workshop. Participants completed the survey in their own time and were given options for how they would return the survey: either directly to the research team or via mail with a stamped, returning envelope provided.

The direct approach method was used after the seminar to achieve the desired sample size. The research team visited community health centers where the CHN coordinators work to invite them to participate in this study. Similarly, participants could complete the survey in their own time and were given options for how they will return the survey: either directly to the research team or via mail with a stamped, returning envelope provided. This approach was based on a preliminary study carried out by the lead author. In the preliminary work, it was found that the direct approach elicited a positive response from the CHN coordinators who were keen to offer their advice on how programs might be improved.

Instrumentation

Description

Data were collected through a cross-sectional survey. The survey was translated from English to Bahasa Indonesia. The translations were carried out by the lead author whose the first language is Bahasa Indonesia. The content had been analyzed, modified and validated by three independent translators from Hasanuddin University, Indonesia. These translators are nurses who obtained their post-graduate degrees from English speaking countries.

The survey was divided into two sections. Section "introduction" consisted of the Disaster Preparedness Evaluation Tool (DPET[®]) which was developed by Bond and Tichy [21,22]. It measures the current levels of knowledge, skills and personal preparedness related to disaster. The DPET[®] instrument contains 47 Likert-type questions with six response options ranging from strongly disagree to strongly agree. Since this study will focus on natural disaster preparedness among CHN coordinators, nine questions that focused on manmade disaster and biological hazards were excluded. In addition, adjustments and clarifications were made to several questions (after being translated into Bahasa Indonesia) without changing the meaning of the statements to ensure the

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