



Research paper

Disaster management: Emergency nursing and medical personnel's knowledge, attitude and practices of the East Coast region hospitals of Malaysia



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ABSTRACT

Background: Disaster management is critical, as its insight could diminish the impact of a disaster, and participation of emergency medical personnel is crucial. This study explores emergency medical personnel's knowledge, attitude and practice towards disaster management.

Methodology: This study utilised a cross-sectional study design, and the data collected from 194 emergency nursing and medical personnel (staff nurses, doctors and assistant medical officers), using a questionnaire.

Results: Majority of the personnel had an adequate knowledge and practices, and portrayed a positive attitude towards disaster management. Amongst the sociodemographic factors studied, gender and education level were significantly associated with increased knowledge and practice scores. Working experience, involvement in disaster response and attended disaster training had a significant association with higher practice scores. None of the sociodemographic factors studied had an effect on attitude scores.

Conclusion: Despite the diversity of their backgrounds, respondents exhibited their adequate knowledge and practice, and had positive attitudes towards disaster management. It is substantial for emergency nursing and medical personnel, to inhibit the severity of the impacts of the disasters. Their knowledge, attitude and practice studies could assist in the implementation of programmes relevant to disaster management to ensure their preparedness to assist the affected communities.

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Introduction

In recent years, the world has been affected by the increasing incidence of major disasters, such as earthquakes, hurricanes, floods and tsunamis. These events involve an enormous number of deaths, damaged properties, and affect the economy of the countries concerned. The number of people affected by disasters worldwide has increased by 17 percent over the past few decades [1]. Indeed, a disaster does not only refer to catastrophic natural disasters, but it also includes technological disasters [2,3,4].

Disaster is defined as “a serious disruption of the functioning of the community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources”

[5]. Unlike neighbouring countries, Malaysia has not been struck by large-scale disasters, such as volcanoes and typhoons, thanks to its geographical topography. Rather, Malaysia often faces localised disasters, such as floods, hazes, landslides and pandemics. However, since the millennium years, tsunami and earthquakes have begun appearing. When this happens, the health care personnel, in particular, those who work in hospitals play active roles in assisting the community affected.

Disaster management came to the attention of Malaysian government after the event of building collapsed in 1997 [6,7]. Ever since, the government began to improve the planning of disaster management, establishing National Security Council Directive No.20; on the Policy and Mechanism on National Disaster Relief and Management. The Directive No.20, the main policy for disaster management in Malaysia, guides agencies across the nation managing disaster and its aftermath [8]. Emergency nursing and medical personnel play vital roles in situations involving human lives dur-

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ing a disaster, yet they receive little training to the disaster that then result in low levels of awareness due to the less exposure.

In Malaysia, the study of disaster management amongst health care providers, primarily those who work in Emergency and Trauma Department, is limited, despite the growing number of disaster events [9]. The United Nation International Strategy for Disaster Reduction (UNISDR) emphasises that hospitals and other health care facilities are important assets to communities on a day-to-day basis, as well as during the occurrence of a disaster [10]. Since disaster is unpredictable, the failure of hospitals and emergency services to manage a disaster severely affects the community.

Due to that reason, the demand for improvement of disaster planning and preparation with the aim of equipping the needs of health care workers in providing care to victims is greater than ever. Hammad and associates argue that a review of the literature demonstrates a small volume of studies directly related to emergency nurses or emergency medical personnel with disaster [11]. Indeed, Hammad et al. [12] also reveal that emergency nurses with disaster exposure results in better preparedness and an increase in determination to handle the situation.

Several authors report that education and training prior to disaster response is a crucial element to prepare emergency medical personnel beforehand [13,14], and proved to be a key feature to handling any disasters [15]. The Ministry of Health Malaysia is yet to mandate disaster training among the health care professionals. However, Grey claims emergency nursing and medical personnel must be trained and be prepared to assist the community because of the risk of emerging disease and facing the dynamic of health care system [16].

In order to establish the need for disaster training amongst emergency nursing and medical personnel, it is vital to ascertain their knowledge, attitude and practices towards disaster management. Furthermore, this study also explores which sociodemographic profile influence knowledge, attitude and practices of emergency nursing and medical personnel about disaster management.

Material and methods

This study was a quantitative, cross-sectional, study, which targeted all emergency nursing and medical personnel who work in the general hospitals of three states of East Coast region of Malaysia. Using Raosoft online calculator, the total sample of 196 required to be representative of the entire population of 329 emergency nursing and medical personnel (doctors, staff nurses and assistant medical officers). Stratified random sampling was used to ensure distribution across hospitals and professional groups. Houseman officer, any health care students and those on leave, i.e. maternity leave, sick leave and annual leave were excluded. A total of 196 personnel were randomly selected.

For this study, a questionnaire developed by Ahayalimudin [17] was utilised to collect the study data. This questionnaire had three domains: knowledge, attitude and practice. The questionnaire distribution involved a 17-item of knowledge, an 11-item of attitude and a 14-item of practices. The questionnaire of yes-no-uncertain choice covers the aspect ranging from the definition, classification, phases and its activities to the impacts of the disaster. A 5-Likert scale (agree-disagree-uncertain) was utilised to determine their attitude on the involvement, phases and its activities and the impacts of the disaster. The items for practice section comprised of the yes-no-uncertain answer. The scores of all domains were set to 60% cut-off point to distinguish the adequate, inadequate for knowledge and practice, and positive, negative for attitude.

The questionnaire underwent validity and reliability testing and was scrutinised by experts from disaster medicine, community

health medicine and nursing. Face validity was established by a pilot study of a similar population of nurses. For the reliability test, the questionnaire was assessed by using internal consistency after a pilot study was carried out. A Cronbach's alpha of knowledge and practice appears above 0.7, and 0.660 for attitude. The questionnaire was prepared with a combination of positive and negative response to avoid leading the respondents answering merely 'yes' answer. The questionnaire was distributed to all personnel, and 194 responded (99.0%). This study had ethical approval from the Ministry of Health Malaysia (MOH) and International Islamic University Malaysia (IIUM) and was carried out between March and June 2013. Indeed, this study was awarded a research grant by IIUM.

SPSS version 19.0 was used to analyse the data. From the test of Kolmogorov-Smirnov, skewness and kurtosis, the data demonstrated normal distribution, so means (M) and standard deviations (SD) were presented. In addition, Chi-square and Fisher exact test for the inferential (bivariate) were used to examine associations between variables and for comparing the knowledge, attitude and practices of respondents between different hospitals.

Results

Of Table 1, the majority of respondents were aged 40 years or less (83.5%, n = 162) and this was comparable to all three hospitals. Only 16.5% (n = 32) of respondents were aged over 40 years. In relation to gender, 46.9% (n = 91) were males and 53.1% (n = 103) were females. There was a variation in the levels of education of the respondents for all three hospitals. Most of the Bachelor and Master's degree holders were doctors, whereas certificate and diploma holders were mostly nurses and assistant medical officers. Year of graduation indicates those who graduated before the year 2000 had less exposure to disaster training during their basic or undergraduate training.

Most of the respondents had four or fewer years of experience (55.15%, n = 107) and 44.8% (n = 87) had five or more years of experience. Respondent's year of graduation was similar between the three hospitals. In relation to the respondent's involvement in disaster response, there was a comparable distribution amongst three hospitals. Of 194 respondents, the vast majority had attended disaster training/education with 77.84% (n = 151), with a similar distribution between the three hospitals.

Referring to the questionnaire, more than 80% of the respondents answered correctly of two of the items on knowledge domain asked the definition of disaster and disaster management. More than 60% of respondents answered 'yes' despite 'no' for item *Based on Malaysia guideline, disaster management phase can be divided into five (5) phase*. The respondents replied most of the negative response items that have been asked on disaster activities differently from the actual answer. Majority of the respondents know that disaster will increase the risk of developing communicable disease among the community affected as well as to the responder.

For items of attitude, more than 93% respondents agreed that it is important for them to read and understand their institutions' disaster management plan. The majority of them were willingly involved during disaster response. However, half of them felt that assisting disaster victims regarding their basic needs is not their responsibilities. The questionnaire also asked about their opinion on the incorporation of disaster nursing management into nursing curriculum and more than 85% agreed the authorities do so.

More than half knew the location of their disaster plan and agreed that it could be easily accessed, with more than 60% have read the plan and some taken initiative to read other institutions' disaster plan. In addition, more than three quarter prepared to be involved in any disaster response and majority willing to partic-

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