

Perception towards the Preparedness for Disaster Management among Nurses in Community Clinics

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ABSTRACT

Disasters are defined as extraordinary events which occur abruptly, bringing great damage or harm, loss, and destruction to people and the environment. Nurses may have a more conflict and difficulties in disaster decision making where the victim condition need to be treated in disaster place. Nurses play a key role in hospital as a leaders and managers in the disaster operation and command center but limited data shows that the nurses experience in disaster management. The aim of this study is to evaluate the perception of knowledge and skills on the preparedness in disaster management among nurses in community clinics. A descriptive cross-sectional study was conducted in 27 government clinics in one of the states in Malaysia with a convenient sampling, 260 participants are selected. The questionnaire consisted of three sections; socio-demographic characteristics, the perception of knowledge and skill towards preparedness for disaster management rated on a Likert scale. In the effort to collect the intended data, a self-report questionnaire adapted and modified from Disaster Preparedness Evaluation Tool (DPET) was implemented (Alrazeeni, 2015). This study revealed that Nurses in these community clinics were moderate in terms of the perception of knowledge (Mean= 3.65, SD= 0.61) and the perceived skills (Mean= 3.68, SD= 0.56) on the preparedness in Disaster Management. Nevertheless, they were interested in disaster preparedness management training (n=227, 87.3%) and were confident as first responders of disaster (Mean= 3.88, SD= 0.61). However,

they were not much involved in disaster preparedness plan (Mean= 3.23, SD= 0.90) and claimed that there was a lack of leadership figure in disaster situation (Mean= 3.06, SD= 0.92). In conclusion, nurses in community clinics need to gain knowledge and skills by involving themselves in disaster planning and drills as the preparation for disaster management for them to be the first responders in helping and managing people in this situation.

Keywords: *perception, disaster management, nurses, community clinic, knowledge*

INTRODUCTION

A disaster is defined as a serious disruption of community or society which causes human, material, economic or environmental losses or harm. A disaster would usually exceed the ability of the affected community or society as a whole to cope using its own resources (Alrazeeni, 2015; Diab & Mabrouk, 2015).

Meanwhile, disaster preparedness is referred to the state of readiness of an organisation to respond successfully to disaster situations while also reducing the negative aftermaths for the health and safety of individuals and the integrity and function of the physical structure and system (Conlon & Wiechula, 2011).

In the disaster operations and command centre, public health nurses play important roles not only as the front-line responders to serve for the public health service but also as leaders and managers (Magnaye, M, Ann, Gilbert, & Heather, 2011). They also play important roles in promoting the development of a caring and healthy community in which this field remains healthy and stable through land use rules and building codes.

All members of healthcare teams should be trained to work together during any disaster. Since the healthcare team is among the first to deal with these conditions, they should be prepared (Veenema, 2013). Nurses' roles are important in response of accidents, disasters and bioterrorism. In order

to meet these necessities, it is undeniable that they must be properly trained to be prepared with knowledge and (Pourvakhshoori, Norouzi, Ahmadi, Hosseini, & Khankeh, 2016).

SIGNIFICANCE OF THE STUDY

After a few series of disasters happening such as tsunamis, landslides and a few cases of building collapses, the Malaysian government has been triggered to improve the disaster management planning (N. Ahayalimudin, 2016).

The Directive No.20, the main policy for disaster management in Malaysia, guides agencies across the nation in managing disasters and its aftermaths. This includes the preparedness of health care providers in assisting the community as the risks of emerging diseases and facing the dynamic of health care system would rise tremendously during times of disasters (R. Roosli, 2012). Since any disaster can strike without warning, it is important that the health care team needs to be familiar with their own disaster and management policies (Garnett & Moore, 2010).

The preparedness is and the higher determination to handle the situation should be inculcated. Knowledge and skills in disaster management should be developed to implement the education and training relevant to disaster management. This is to ensure the preparedness as well as assistance for the affected communities are delivered during a disaster.

There are several studies focusing on emergency nurses and medical personnel working in hospital but very limited study was done amongst the community health nurses when actually they are the first individuals who would be referred to whenever any disaster involving casualties happens.

The aim of this study is to evaluate the perception of knowledge and skills on the preparedness in disaster management among nurses in community clinics.

METHOD

Research Design

A descriptive cross-sectional study was selected for this study. This study was conducted in 27 government community health clinics in Kuala Lumpur which provide Primary Health Care. The samples were nurses from community health clinics with minimum of one year experience. The total population of nurses in this district was 801. Convenient sampling was chosen to select 260 nurses in the respective community clinics to participate in the study with the Confidence Interval of 5% and the Confidence Level of 95%. The exclusion subjects were nurses who disagreed to participate in the study and nurses who were on leave or Maternity Leave.

A set of self-administered questionnaire adapted from Disaster Preparedness Evaluation Tool (DPET) by Alrazeeni was implemented in the study (2015). This questionnaire was designed to evaluate the perception of knowledge and skills on the preparedness in disaster management among nurses in community clinics.

There were three sections in the questionnaire. The first section was on the participants' demographic data. This section included their age, gender, marital status, ethnic, education level, and working experience. Additional information regarding their involvement in managing disasters and history of training or courses related to disaster management were also asked. The second section was on the perception of knowledge towards the preparedness for disaster management (16 questions). While the third section was regarding the perceived skills on disaster management (20 questions). Both of these sections were rated on a Likert scale ranging from 'strongly disagree' to 'strongly agree'.

The questionnaire was prepared bilingually; Malay and English. The translation process was validated by accredited translators from Malaysian Institute of Translation and Books. With the final versions of the questionnaire, a pilot study was carried out to test the feasibility of the study and the time needed to answer the questionnaire. The participants took 15-20 minutes on average to complete the questionnaire.

In order to obtain the data, the researcher approached the nursing leaders and managers in this district. Brief explanation was given and an appointment was arranged for data collection in each of the community clinic involved. On the day of data collection, respondents were gathered in a meeting room and were briefly explained regarding the study. Information sheets containing a statement assuring participant's anonymity and confidentiality was also distributed before gaining the written consent. Respondents were given 15-20 minutes to answer the questionnaire and they were requested to complete the questionnaire on the spot, with the availability of the researcher at the site for assistance.

This study was registered under National Medical Research Register for Medical Research (NMRR-16-2626-33093) and approved by the UiTM Research Ethics Committee (600-RMI (5/1/6), Community Research Centre (CRC) Hospital Kuala Lumpur (HKL/CRC/SL/06) and Medical Research Ethics Committee (MREC); (5) KKM/NIHSEC/P17-560.

Data Analysis

The data were analysed using SPSS (IBM Corp. Released 2011. IBM SPSS for Windows, Version 20.0 Armonk, NY). The data were cleaned and a reliability test was conducted to determine the consistency of a research study. The Cronbach's alpha value was 0.94, showing an excellent consistency of the data.

RESULTS

The characteristics of the respondents in this sample were presented in Table 1. The mean age of the respondents was 34.15 years of age (SD= 7.13). Most of the respondents was at the age of 31 to 40 years old ($n=126$; 53%). The proportion of female respondents was larger compared to the male respondents at 64.6% ($n=168$) and 35.4% ($n= 92$) respectively. Most of them were married (59.6%, $n= 155$). Majority of these nurses were Malay (93.1%, $n= 242$). Their working experience were about 10.09 years (SD= 6.67). About 51.5% ($n=134$) of these nurses were Registered Nurses

(RN). Majority of them had no experience in disaster management (84.6%, $n= 220$) while 58.8% ($n=153$) claimed they had attended training or courses related to disaster management.

Table 1: Demographical Characteristics of the Respondents (n=260)

Variables	Frequency(n)	Percentage (%)
Age	Mean: 34.15 years old (SD:7.13)	
<25-year-old	25	10
26 to 30-year-old	60	23
31 to 35-year-old	80	31
36 to 40-year-old	57	22
>40-year-old	38	15
Gender		
Female	168	64.6
Male	92	35.4
Marital Status		
Single	105	40.4
Married	155	59.6
Ethnic		
Malay	242	93.1
Indian	7	2.7
Others	11	4.2
Level of Education		
Diploma	149	57.3
Degree	3	1.2
Master	1	0.4
Others	107	41.2
Work Experience	Mean: 10.09 years (SD:6.67)	
<4-years	58	22
5 to 10-years	89	34
11 to 20-years	92	35
>20-years	21	8
Grade		
U19	97	37.3
U24	13	5.0

U26	6	2.3
U29	134	51.5
U32	10	3.8
Involve in Disaster Management		
Yes	40	15.4
No	220	84.6
Attended Courses related to Disaster Management		
Yes	153	58.8
No	107	41.2

The Perception of Knowledge on the Preparedness in Disaster Management

The perception of knowledge towards the preparedness for disaster management among nurses in these community clinics were presented in Table 2. This study revealed that the respondents had perceived their knowledge to be moderate when it comes to the preparedness in Disaster Management (Mean= 3.65, SD= 0.61). More than half of the respondents agreed they had knowledge on the preparedness in Disaster Management ($n=171$, 65.8%). They claimed they were interested in disaster preparedness management training (Mean= 4.04, SD= 0.71). However, they had less participation in disaster preparedness plans in their community (Mean= 3.23, SD= 0.90).

Table 2: The Perception of Knowledge towards the Preparedness for Disaster Management

NO	QUESTION	MEAN	SD
1	I participate in disaster drills or exercises at my workplace on a regular basis.	3.43	0.87
2	I participate in disaster preparedness plans in my community.	3.23	0.90
3	I know who to contact when facing disaster in my community.	3.74	0.70

4	I participate in educational activities on a regular basis: continuing education classes (CME), seminars, or conferences dealing with disaster preparedness management.	3.47	0.87
5	I read journals / articles related to disaster preparedness.	3.66	0.73
6	I am aware of disaster preparedness management training offered at my workplace or in the community.	3.44	0.78
7	I am interested in disaster preparedness management training.	4.04	0.71
8	I find the research literature on disaster preparedness management easily accessible.	3.42	0.80
9	I find the research literatures on disaster preparedness understandable.	3.60	0.71
10	Finding relevant information about disaster preparedness related to my community needs is an obstacle to my level of preparedness.	3.52	0.65
11	I know where to find relevant information related to disaster preparedness management.	3.51	0.67
12	I know the list of contact person in case I'm facing disaster situation.	3.55	0.70
13	In case I'm facing a disaster situation, I think there is sufficient support from the upper level.	3.86	0.67
14	I know the potential disaster risks in my community.	3.76	0.67
15	I know my limits when facing disaster.	3.65	0.69
16	I am confident in recognizing differences in assessments and indicating potential exposure to biological or chemical agents.	3.42	0.76
TOTAL		3.65	0.61

The perceived skills towards Disaster Management

The perceived skills towards Disaster Management among nurses in these community clinics were presented in Table 3. This study revealed that the respondents had moderate perceived skills on the preparedness in Disaster Management (Mean= 3.93, SD= 0.56). More than half of the respondents agreed they had skills on the preparedness in Disaster Management (n=197, 75.7%). They claimed they were confident with their abilities as health care responders in any disaster (Mean= 3.88, SD= 0.61). However, they noted that there was lacking a leadership figure in disaster situation (Mean= 3.06, SD= 0.92).

Table 3: The perceived skills towards Disaster Management

NO	QUESTION	MEAN	SD
1	I consider myself prepared for the management of disasters.	3.70	(0.69)
2	I participate/have participated in creating new guidelines, emergency plans, or lobbying for improvements on the local or national level.	3.32	(0.77)
3	I would be considered a key leadership figure in my community in a disaster situation	3.06	(0.92)
4	In case of a bioterrorism/biological or chemical attack, I know how to use personal protective equipment.	3.89	(0.69)
5	In case of a bioterrorism/biological or chemical attack, I know how to execute decontamination procedures.	3.48	(0.67)
6	In case of bioterrorism/biological or chemical attacks, I know how to perform isolation procedures so that I minimise the risks of community exposure.	3.68	(0.70)
7	I am familiar with the local emergency response system for disasters.	3.80	(0.64)
8	I am familiar with the accepted triage principles used in disasters.	3.78	(0.65)
9	I have personal/family emergency plans in place for disasters.	3.74	(0.65)
10	I have an agreement with loved ones and family members on how to execute our personal/family emergency plans.	3.73	(0.70)
11	I can describe my role in the response phase of a disaster (in the context of my workplace, the general public, media, and personal contacts).	3.79	(0.61)
12	I am familiar with the main Groups (A, B, C) of biological weapons (Anthrax, Plague, Botulism, Smallpox, etc.), signs and symptoms, and effective treatments.	3.26	(0.71)
13	As a nurse, I am confident in my abilities as a health care provider and first responder in disaster.	3.93	(0.58)
14	As a nurse, I am confident to be a manager or coordinator of a shelter.	3.70	(0.69)
15	As a nurse, I am confident in my abilities to be a member of a decontamination team.	3.78	(0.62)
16	In case I encounter a disaster, I know how to do history taking and physical assessment.	3.88	(0.61)
17	I am confident that I can manage patients independently without physician supervision in disaster.	3.48	(0.85)

18	I am familiar with the organisational logistics and roles among local and national agencies in disaster response.	3.12	(0.81)
19	I am confident in implementing emergency plans and evacuation procedures.	3.47	(0.68)
20	I feel confident in providing health education in case of acute stress among the victim.	3.65	(0.64)
TOTAL SCORE		3.68	(0.56)

DISCUSSION

This study demonstrated that nurses in these community clinics had a moderate level of perceived knowledge and skills on the preparedness in Disaster Management. These results were similar with a study done by Al Thobaity *et al.* (2015) which concluded that nurses in Saudi Arabia had moderate knowledge concerning the disaster preparedness. They also claimed they were interested in disaster preparedness management training and confident with their abilities as health care responders in a disaster. However, they were reported to have participated less in disaster preparedness plans in their community and lacking a leadership figure in disaster situation.

This shows that the need for a formal education and on-going disaster management education is significant to improve nurses' abilities, confidence and competency to coordinate effectively.

Fung *et al.* (2008) found that nurses in Hong Kong felt that disaster drills were important and useful tools in building disaster competencies. Hammad *et al.* (2011) on the other hand concluded that regular disaster drills allow nurses to understand their roles in real disasters. Thus, regular disaster drills are useful in training nurses to respond confidently and competently when disasters strike.

Nurses in many countries are not permitted to be involved in developing plans and guidelines for several reasons, including gender issues. From the findings, it is highly recommended that nurses start to get involved in the planning for disasters and understand disaster preparedness better, wherever culturally appropriate.

CONCLUSION

This current study revealed that the community health nurses had a moderate level of perceived knowledge on the preparedness in Disaster Management. Despite the moderate level, the respondents were interested in disaster preparedness management training. But they were not confident in participating in the drafting of any emergency plan and planning of emergency for disaster situations in their community.

They also had a moderate level of perceived skills on their preparedness in Disaster Management which means the respondents in this study were lacking skills. Almost every respondent did not consider his or himself as a key leadership figure in their community when facing a disaster situation. Thus, it can be concluded that the respondents in this study were good in perception of skills but they need to improve their skills as they are still not confident in handling disaster situations.

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