JAN ORIGINAL RESEARCH

Disaster preparedness among Hong Kong nurses

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Accepted for publication 25 February 2008

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FUNG O.W.M., LOKE A.Y. & LAI C.K.Y. (2008) Disaster preparedness among Hong Kong nurses. *Journal of Advanced Nursing* **62**(6), 698–703
doi: 10.1111/j.1365-2648.2008.04655.x

Abstract

Title. Disaster preparedness among Hong Kong nurses.

Aim. This paper is a report of a survey to explore Hong Kong nurses' disaster preparedness.

Background. Increasingly frequent global disasters are posing threats to human health and life. The World Health Organization has called for countries to have detailed plans at all levels in order to be prepared for disasters that may arise.

Method. A questionnaire was distributed to convenience samples of practising Registered Nurses studying in Master's degree programmes at a Hong Kong university in 2007.

Results. Of a possible 174, 164 questionnaires were returned (Response rate 94%). Almost all nurses (97·6%) considered the government health department to be the organization most involved in disastrous situations. The majority (84·8%) were aware of the existence of a protocol on disaster management at their workplace. About one-third would respond in accordance with protocol (38·4%) or rely on directions from their immediate supervisors (34·8%) if a disaster occurred. Almost all the nurses (97%) considered themselves not adequately prepared for disasters. They recognized that a protocol for disaster management (85·4%) and training and drills for disasters (both 84·1%) are useful tools.

Conclusion. Nurses in Hong Kong are not adequately prepared for disasters, but are aware of the need for such preparation. Disaster management training should be included in the basic education of nurses.

Keywords: disaster awareness, disaster management training, disaster preparedness, nurses, questionnaire, survey

Introduction

Since the catastrophe of the 11 September 2001 terrorist attack on the World Trade Centre Towers in New York City, the SARS pandemic in March 2003, the tsunami in South East Asia in December 2004 and Hurricane Katrina in New Orleans in 2005, the disaster preparedness of communities has become an international concern. In fact, disasters are occurring somewhere in the world at an average of once every week (Veenema 2003).

Background

Large-scale disasters around the world demonstrate that no one and no country is immune from the threat of natural or other tragedies. Although Hong Kong has been relatively free from disasters, this does not override the need of a responsible society for disaster preparedness.

After 11 September 2001, nearly 5000 hospitals in the United States of America (USA) were urged to revise their protocols for disaster management, with an emphasis on

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preparedness. In the USA, an increasing number of continuing education courses have been established to prepare nurses on disaster management and responses (Bond and Beaten 2005). Disaster required the response that is community wide and should not simply be emergency service driven (Davies 2005). A set of core competencies for disaster and emergency nursing was published in 2002 (Gebbie & Qureshi 2002). The World Health Organization has also recommended the preparation of a detailed management plan for all potential disastrous happenings that could arise at a national level (World Health Organization, Expert Consultation Report 2006). There is no doubt about the global need for all healthcare workers to be prepared for disaster response and management, as well as for the public to be educated about how to protect themselves when disasters strike.

Disaster preparedness for nurses is also emphasized by the International Nursing Coalition for Mass Casualty Education (INCMCE) (2003), which states that nurses worldwide must have a minimum level of knowledge and skill to respond to different catastrophic situations. It is believed that nurses who are prepared and trained for disasters can play an important role and cope better when they occur (Suserud and Halijamae 1997, Veenema 2006).

Disaster preparedness, including risk assessment and multidisciplinary management strategies, is critical to the delivery of effective responses to the health needs of people afflicted during a disaster. It is crucial that health professionals and related personnel be prepared to maintain the stability of our societies and nations. To help ensure that crucial relief services are provided in the chaotic peri- and postdisaster periods, the International Council of Nurses (ICN) (2006) urges that relief and contingency operations should be planned in advance.

Healthcare professionals, particularly nurses, should be equipped with knowledge and skills for disaster prevention, and contingency plans should be established so that faster access to services can be triggered during a disaster. All nurses should increase their profession's ability to provide adequate healthcare services before and after a disaster by their participation in prevention, mitigation, preparedness and relief operations.

A Chinese saying, 'Prepare for danger while enjoying a peaceful life', sums up the need for disaster nursing preparation. Looking ahead in Hong Kong, with its ageing population, geographical closeness to other Asian countries and mainland China, the threat of infectious disease and its dense population distribution, the need to prepare for disasters places great demands on the nursing profession.

Preparation of nurses for disaster

Learning from the disasters happening around the world, and the resulting death tolls, health consequences and impact on people, nurses should be aware of the importance of being prepared for disastrous events. As the largest subgroup of the healthcare workforce, nurses are one of the community's most vital resources in dealing with unforeseeable disasters; their preparedness and involvement in disaster management in terms of prompt responses, effective management and after care are crucial for the health and welfare of the community.

The experience of the SARS (Severe Acute Respiratory Syndrome) pandemic has led both health professional groups and government officials in Hong Kong to realize the importance of disaster preparedness. To ensure that health facilities and healthcare workers are functioning effectively and efficiently when catastrophe occurs, it is critical to create awareness and provide training during non-emergency periods and during their initial healthcare education. This need is being addressed in many countries around the world. However, no specific programme that addresses disaster nursing management and preparedness is available in existing nurse education programmes in Hong Kong.

The study

Aim

The aim of the study was to explore Hong Kong nurses' disaster preparedness.

Design

A questionnaire survey was carried out in 2007.

Participants

A convenience sample was recruited among practising Registered Nurses studying on Master's degree programmes at a university in Hong Kong. Nurses who were from overseas and had never worked in Hong Kong were excluded. A total of 164 completed questionnaires (174 were distributed, so the response rate was 94%) were collected from four different classes.

Questionnaire

The questionnaire was developed by a team of nurse academics with expertise in emergency care, intensive

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care and community health. All questions were developed based on an extensive review of the related literature and, after several rounds of scrutiny, some amendments were made.

The final questionnaire consisted of 26 questions divided into four sections. Section 1 solicited data on demographics and nursing experience; section 2 asked about preparedness to deal with a disaster at work and the existence of protocols in hospitals relating to disaster management; section 3 contained questions about the agencies or public services that should be involved in responding to disaster situations; and section 4 asked nurses to identify their education needs and the materials that they considered would be useful to prepare them better for disasters.

Validity and reliability

The questionnaire was validated by a panel of seven experienced nurses with expertise in emergency care (two), intensive care (two), community health (one) and nurse education (two). Five of the panel members had queries on six items, and minor changes were made in the final version of the questionnaire. The Content Validity Index was 0·94, suggesting a high degree of validity. Since the questions were intended to solicit factual information reliability testing of the questionnaire was not conducted.

Data collection

Questionnaires were distributed by the researcher, who was not involved in teaching these students, and collected immediately after completion.

Ethical considerations

The study was approved by the university ethics committee. The questionnaires were distributed in classroom settings. Students were given an explanation of the study and told that participation was voluntary and that there would be no penalty for non-participation. The questionnaires were completed anonymously and consent was implied by completion and return of the questionnaire.

Data analysis

Descriptive statistics were calculated using the Statistical Package for Social Sciences Version 12 (SPSS Inc., Chicago, IL, USA).

Table 1 Respondent demographics (n = 164)

	n	%
Gender		
Female	134	81·7
Male	30	18·3
Age (years)		
18–25	8	4·9
26–35	116	70·7
36 or above	38	23·1
Missing data	2	1·3
Marital status		
Single	111	67·7
Married	53	32·3
Years of experience in nursing		
< 1 year	3	1·8
1–5 years	56	34·2
6–10 years	54	32·9
11–15 years	19	11·6
> 15 years	32	19·5
Current position		
Registered Nurse	151	92·1
Advanced Practice Nurse/Nurse Specialist/Nursing Officer	13	7·9
Clinical areas		
Medical/Surgical (out-patient, infection control, etc.)	71	43·3
Acute Care (emergency, intensive/coronary care, operating theatre, etc.)	36	21·9
Specialty (obstetrics, gynaecology, neurology, oncology, psychiatric, etc.)	30	18·3
In-service Unit	27	16·5

Results

Demographics

Table 1 shows the participant demographics. The majority were female (81·7%) and aged 26–35 years (70·7%). Nearly one-third (67·7%) were single and two-thirds (64%) had more than 5 years of nursing experience. The majority were bedside nurses (92·1%) and only 12 (7·9%) were in management positions. Most were working in medical and surgical units (43·3%).

Organizations involved in disaster management

When asked to identify the organizations that should be involved in disaster management, almost all the nurses surveyed (97·6%) agreed that the Hospital Authority (an independent organization accountable to the Government through the Secretary for Health and Welfare for managing all public hospitals in Hong Kong), is the body most involved in responding to disaster situations. The other organizations

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Table 2 Preparedness for disaster (n = 164)

	n	%
Organizations considered most involved in disastrous situations by nurses (top 5)		
Hospital Authority	160	97·6
Hong Kong Police Force	159	97·0
Fire Services Department	157	95·7
Government Flying Services	138	84·1
Auxiliary Medical Services (e.g. St John's Ambulance, Red Cross)	131	79·9
Nurses' perceptions of their own preparedness for disasters		
Prepared in some ways	110	67·1
Not prepared at all	49	29·9
Confident of own preparation for disaster	5	3·0
Awareness of available protocol for disaster management in hospital workplaces		
Available and has read	100	61·0
Available but has not read	39	23·8
Does not know if there is any/doesn't think there is any	25	15·2
Nurses' reported immediate action if a disastrous situation were to occur in hospital		
Follow hospital protocol to manage the situation	63	38·4
Follow instructions from immediate supervisor on the scene	57	34·8
Alert others before escaping	40	24·4
Evacuate patients as soon as possible	25	15·2
Escape as soon as possible	12	7·3

that were considered to be involved in disaster response included the police force (97·0%), fire department (95·7%), Government Flying Services (84·1%) and auxiliary medical services such as the Red Cross (79·9%). Others include the Social Welfare Department (67·7%), telecommunication services (66·5%), and the Home Affairs Office (41·5%) (See Table 2).

Nurses' preparedness for disaster

Almost all respondents acknowledged that they were inadequately prepared (97%). As many as 84·8% believed that there was a protocol in their workplace for dealing with disastrous events, but only 61% had read these protocols. The other 15·2% did not know if there was such a protocol or did not think there was one.

If disaster were to strike while they were at work, about one-third (38·4%) of respondents reported that they would follow the hospital protocol, while another one-third (34·8%) would just wait for instructions or direction from their supervisors. Others would alert other people before escaping (24·4%), would evacuate patients (15·2%), and would escape as soon as possible (7·3%).

Table 3 Learning needs in relation to disaster preparedness (n = 164)

	n	%
Educational courses that should be taken in preparing for disaster		
First aid	125	76·2
Basic life support	123	75·0
Advanced cardiovascular life support	105	64·0
Infection control	104	63·4
Field triage	96	58·5
Pre-hospital trauma life support (auxiliary care)	90	54·9
Advanced trauma care nursing	87	53·0
Post-traumatic psychological care	80	48·8
Peri-trauma counselling	74	45·1
All above training	69	42·1
Specific materials or activities needing to be developed to prepare nurses for disaster		
Protocol for disaster management	140	85·4
Course in disaster management	138	84·1
Drills for disaster	138	84·1
Information pamphlets	89	54·3
Disaster information website	88	53·7
Visits to disaster sites	79	48·2

Identified needs in preparing for disaster

All participants agreed that there are courses which nurses should take to be prepared for disasters. Some of these courses, in order of importance, were: First Aid (72·2%), Basic Life Support (75%), Advanced Cardiovascular Life Support (64%), Infection Control (63·4%), Field Triage (58·4%) and others (see Table 3).

The majority of respondents considered that specific materials and activities related to disaster management should also be developed to enable nurses to prepare for disasters. A protocol for disaster management was deemed necessary by 85·4%, disaster management by 84·1%, and drills for disaster were cited by 84·1% as helpful to prepare nurses for disasters.

Discussion

The sample in this study was limited to Registered Nurses studying on Master's degree programmes at one university in Hong Kong and therefore is not necessarily representative of the population of Hong Kong nurses. Also, this particular group of nurses may be more likely than those who are not studying for a higher degree to realize the need to be prepared for disaster, and thus more willing to increase their knowledge of related issues.

As disasters are a frequent occurrence, there is a global need for all healthcare workers to be aware and prepared in advance for their management. Locally, the experience of SARS has alerted healthcare workers in Hong Kong to the

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What is already known about this topic

- The World Health Organization has called for countries to have detailed plans at all levels in order to be prepared for disasters.
- Healthcare professionals should be equipped with knowledge and skills for disaster prevention, and contingency plans should be established so that faster access to services can be triggered during a disaster.
- Nurses are the largest group in the healthcare team and, as such, their disaster preparedness, in terms of prompt responses, effective management and after care, is vital.

What this paper adds

- Almost all nurses agreed that the Hospital Authority, Hong Kong Police Force and the Fire Department bear the major responsibility for involvement in disaster situations.
- Almost all nurses were aware of the existence of a protocol on disaster management at their workplace, but considered themselves to be inadequately prepared and lacking in confidence to respond appropriately.
- Disaster management training should be included in the basic education of nurses.

importance of being prepared for any disaster that may strike.

Almost all respondents (97·6%) in the present study believed that the Hospital Authority (HA) is the organization most involved in responding to disastrous situations. As the majority of the Hong Kong nurses are working in HA hospitals, they clearly have a sense of responsibility during disasters. Nevertheless, they also recognized the need for a multidisciplinary approach to disaster management, citing the roles of the police force, fire department, and auxiliary medical services in disaster management.

This data revealed that 94% of the respondents felt inadequately prepared for disaster handling, with more than 80% indicating that it would be useful for them to take more disaster management courses and drills to prepare themselves for disaster situations, despite all respondents being Registered Nurses with at least 5 years of work experience.

Respondents did not feel adequately prepared for disaster but were willing to take continuing education programmes to prepare themselves. Hospital administrators should support the development of a protocol and provide continuing education programmes for all working nurses. Nurse educators should incorporate disaster management elements in education programmes to ensure that all nurses are capable of contributing to immediate disaster response and management.

Proper disaster management safeguards the lives of both victims and rescuers. Nurses, with their advanced skills and knowledge of risk assessment and human physiological responses, together with their understanding of cultural–familial structures and related psychosocial stresses, can play a key role in cooperating with health and social disciplines, government organizations and the private sector, as well as community groups, during a disaster.

Nurses should also assist in developing disaster preparedness programmes (United Nations 2004). They have a community responsibility to raise public awareness with regard to disaster management. Health promotion and education of the general public on how to look after their health during a disaster, especially among vulnerable groups such as the elderly and chronically ill, are of the utmost importance as this issue has not yet been adequately addressed in many countries, including Hong Kong.

The three universities in Hong Kong with nursing programmes should develop and offer courses to prepare their students. However, disaster preparedness is not the responsibility of a person, a particular profession, one organization or governments. In fact, it involves efforts and contributions from all; in other words, the entire community of every city in every country in the world should be prepared. In order to achieve the best possible outcome, members of the general public also need to learn ways to look after themselves effectively and efficiently during disasters.

Author contributions

OF, AYL and CL were responsible for the study conception and design. OF and AYL performed the data collection. OF and AYL performed the data analysis. OF was responsible for the drafting of the manuscript. AYL and CL made critical revisions to the paper for important intellectual content. OF and AYL provided statistical expertise. OF, AYL and CL provided administrative, technical or material support. AYL supervised the study. OF, AYL and CL were responsible for instrument development.

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