



Chinese nurses' relief experiences following two earthquakes: Implications for disaster education and policy development



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ABSTRACT

Disasters require well trained nurses but disaster nursing education is very limited in China and evidence is urgently required for future planning and implementation of specialized disaster education. This describes the themes arising from narratives of Chinese registered nurses who worked in disaster relief after two major earthquakes. In-depth interviews were held with 12 registered nurses from Hubei Province. Riessman's narrative inquiry method was used to develop individual stories and themes, and socio-cultural theory informed this study. Five themes emerged: *unbeatable challenges*; *qualities of a disaster nurse*; *mental health and trauma*; *poor disaster planning and co-ordination*; and *urgently needed disaster education*. Participants were challenged by rudimentary living conditions, a lack of medical equipment, earthquake aftershocks, and cultural differences in the people they cared for. Participants placed importance on the development of teamwork abilities, critical thinking skills, management abilities of nurses in disasters, and the urgency to build a better disaster response system in China in which professional nurses could more actively contribute their skills and knowledge. Our findings concur with previous research and emphasize the urgency for health leaders across China to develop and implement disaster nursing education policies and programs.

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Background

Disasters occur daily around the globe, causing dramatic impacts on individuals, families and communities (World Health Organization [WHO] and International Council of Nurses [ICN], 2009), and their effects are worse in Asia where the largest global share (40.3%) of reported natural disasters occurs annually (Vos et al., 2010), including the Chinese Wenchuan (2008) and Yushu (2010) earthquakes. The Wenchuan 8.0-magnitude earthquake (also called 'the Sichuan Earthquake') caused 87,476 deaths, many injuries, and damages worth \approx US\$ 85 billion (McClean, 2010). Over 25 days post-earthquake there were many aftershocks (Parsons et al., 2008), and more than 15,000 geohazards: landslides, rock falls, debris flows, traffic blockages and heavy rain (Yin et al., 2009; Central Government, People's Republic of China [CGPRC], 2008). The Yushu 7.1-magnitude Earthquake in Qinghai Province

caused 2698 deaths (People's Daily Online, 2010), and \geq 100,000 injured (Ni et al., 2010). It occurred 4000 m above sea level affecting 30,000 square kilometers (Deng et al., 2010) where mostly Tibetan people live. Problems included limited access by road; heavily damaged health facilities; altitude sickness for rescuers; cultural differences; and language barriers that were challenges for first responders (CGPRC 2010a; CGPRC 2010b). The most seriously injured had to be transferred long distances to Xining, Chengdu, Lanzhou, and Xi'an City (CGPRC 2010c).

China enacted the Response Plan for Earthquakes after these disasters, sending teams of doctors and nurses to designated areas. Nurses, the largest group of health care workers globally, play a key role in disaster relief (Yang et al., 2010). As frontline health care providers, in first responding they work in on-site coordination of care, provide care and information, and are educators, mental health counselors, or triage officers (Chan et al., 2010). Nurses after disaster relief have significant and unforgettable experiences and are thus key informants to plan disaster efforts in the future. While China experiences significant disasters annually, there are no policies for disaster nursing *per se* and virtually no disaster nursing training (Zhang, 2009), except for military nurses, and there is

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limited disaster nursing research. Uncovering nurses' experiences regarding disaster relief is important to inform future relief efforts and the development of programs to enable nurses to participate with some confidence in future events. The only thing that is certain about disasters is that they will occur again, and nurses need to be better prepared to face them (Turale, 2014).

Research design

Aim

Describe the experiences of Chinese nurses who worked in disaster relief after the Wenchuan and Yushu earthquakes, and their views about future disaster nursing education/training programs.

Research questions

1. What were the disaster experiences of nurses from Hubei Province who worked in disaster relief during the Wenchuan Earthquake, or the Yushu Earthquake?
2. How prepared did nurses from Hubei Province feel for their disaster work, considering the skills, knowledge, and attitudes required?
3. What advice could these nurses provide to inform the future development of disaster nursing in China?

Theoretical framework

This qualitative study utilized narrative inquiry and in-depth interviews. Socio-cultural theory and Riessman's (2008) narrative method informed the study. When storytellers or participants want to provide narratives, they select the events (or experiences) important to them and meaningful to a particular audience, and construct their story by organizing, connecting and evaluating a sequence of events. Afterwards, researchers can construct stories from the participants' texts. How new understandings are constructed and how we engage with one another is always situated within a sociocultural context. Sociocultural theory in this study allowed for consideration of the contexts of the participants and the people they cared for in the earthquake disasters.

Sample

A convenience sample of 12 registered nurses from four hospitals in Wuhan, Hubei Province were recruited. Potential participants were nominated by hospital directors, or through snowball sampling by other participants. Inclusion criteria were: being assigned through their hospital to the Wenchuan or Yushu Earthquake relief; and working for at least 24 h in the designated disaster zone(s).

Data collection

Interviews were conducted in Chinese in 2010, digitally recorded in private and ranged 50–97 min in length, 63 min on average. Field-notes were written and included in data analysis. Demographic data was requested, including age, gender, number of years worked, qualifications and education, marital status, and specialization. Broad questions asked of all participants were: "Tell me about your disaster experiences"; "How prepared did you feel to undertake these nursing experiences?" and "Do you have any advice as to how nurses should be prepared for disasters in the future?" After analyzing one interview, the researcher would

consider other questions to ask the next participant to encourage meaningful narratives. Interviews were conducted until data saturation was achieved (Holloway and Wheeler, 2010).

Data analysis, rigor and trustworthiness

Interviews were transcribed verbatim, then repeatedly read and interpreted in light of the theoretical framework and research questions. Riessman's (2008) narrative inquiry method resulted in two types of findings. Firstly a narrative that captured the essential points of each participant's story was written, and was validated or modified by each participant, since member checking assists greatly with validity of qualitative studies (Holloway and Wheeler, 2010). Secondly, themes were developed from the 12 narratives after comparing similarities and differences between the narratives, and these were then verified by participants, and it is those themes that are discussed in this paper. Translation and back-translation was then undertaken by bilingual translators, and the final English expression edited by the native English-speaking researchers. An audit trail was kept throughout analysis and the first researcher constantly checked her work with her experienced qualitative supervisor.

Ethical considerations

Wuhan University HOPE School of Nursing gave research ethics approval and permission was obtained from each hospital where participants were located. Verbal and written explanations were given to all participants and written informed consent obtained. Assurances about confidentiality were given, including the right to withdraw from the study at any time without penalty. Because of potential participant distress during interviews in recounting disaster experiences, preparations were made for mental health counseling, but this was not required. Pseudonyms are used here to protect identities.

Findings

All participants, one male and 11 female, worked in hospitals prior to disaster deployment. Only five had voluntarily joined the earthquake disaster relief efforts; the remainder were assigned and had little choice about deployment. Demographic data is displayed in Table 1.

Five themes are presented below and the process of emerging themes from the study is shown in Fig. 1:

Table 1
Demographics of the participants ($n = 12$).

	Number
Age (year)	
25–30	3
31–40	5
41–46	4
Education level	
Bachelor degree	11
Associate college degree	1
Area of specialty	
Perioperative nursing	2
Surgical nursing	8
Pediatric and surgical nursing	1
Surgical and geriatric nursing	1
Length of nursing service (year)	
1–5	2
6–10	3
11–20	2
21–30	5

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