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Review

Nursing in disasters: A review of existing models

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ABSTRACT

Background: Since nurses play an important role in responding to disasters, evaluating their knowledge on common patterns of disasters is a necessity. This study examined researches conducted using disaster nursing as well as the models adopted. It provides a critical analysis of the models available for disaster nursing.

Methods: International electronic databases including Scopus, PubMed, ISI Web of Science, Cochrane Library, Cumulative Index to Nursing and Allied Health (CINAHL), and Google Scholar were investigated with no limitation on type of articles, between 1st January 1980 and 31st January 2016. The search terms and strategy were as follows: (Disaster* OR Emergenc*) AND (Model OR Theory OR Package OR Pattern) AND (Nursing OR Nurse*). They were applied for titles, abstracts and key words. This resulted in the generation of disaster nursing models.

Results: Out of the 1983 publications initially identified, the final analysis was conducted on 8 full text articles. These studies presented seven models. These evinced a diverse set of models with regard to the domains and the target population.

Conclusions: Although, disaster nursing models will inform disaster risk reduction strategies, attempts to systematically do so are in preliminary phases. Further investigation is needed to develop a domestic nursing model in the event of disasters.

Contents

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1. Introduction

Nurses are the largest group of health care providers that play an important role in responding to disasters. Evaluating the state of nursing and nurses' knowledge on common patterns of disasters is undeniable in importance and necessity (Langan and James, 2005; Bridges, 2003). Every year and around the world, many accidents occur, at least some of them have severe financial, physical and psychological losses (Usher and Mayner, 2011; Khankeh et al., 2007; Jennings-Sanders, 2004).

Disasters are special circumstances, and their management requires cooperation of all trained members of the health team. This is because the healthcare team, especially nurses, are among the first persons to deal with these cases (Veenema, 2013; Kaplan et al., 2012; Magnaye et al., 2011; Slepski, 2007; Weiner et al., 2005; Yamamoto, 2004). The World Health Organization defines disasters as natural or man-made events that endanger human life and make people to need the support and assistance of external resources to continue living normally (Usher and Mayner, 2011). The magnitude of natural disasters affects the whole society and there is great loss of life and property. According to the 2013 Center for Research on the Epidemiology of Disasters (CRED) report, natural disasters have a devastating impact on human society. Worldwide, 330 reported natural disasters have caused the death of more than 21,610 people, affected 96.5 million people and damaged properties worth US$ 118.6 billion (Guha-Sapir et al., 2014). Considering that natural disasters impair the health and welfare of the community, providing affordable health care is one of the main factors influencing survival, reduced mortality and increased welfare of the people after the occurrence of such incidents (Khankeh et al., 2007; Jennings-Sanders, 2004). In such situations, a quick and effective health response is needed beyond the usual emergency response (Slepski, 2005).

Natural disasters are special situations which require all trained members of a health team to work together to better manage the situation. Since the healthcare team, particularly nurses, are among the first people who deal with these issues, they should be well prepared (Veenema, 2013). Nurses are also crucial respondents to accidents, disasters and bioterrorism, so they must be prepared to meet these requirements according to educational level, setting of work place or skills, which is an undeniable necessity (Thomas and Inglesby, 2011; Magnaye et al., 2011; Slepski, 2007; Rebmann, 2006). Therefore, nurses should be involved in these activities, in order to act effectively in such situations (Yamamoto, 2013). Nurses play an active role in disaster management because of the bulk of time they spend with patients. The role of this group and their expertise has made community members to trust them in providing clinical care, team leadership skills, creative problem solving, resource management and communication skills, which are important in situations of rapid change (Gebbie and Qureshi, 2002). To respond effectively to such incidents, they must know the concept of disaster nursing and its models. Introduction to disaster nursing and patterns can lead to positive outcomes such as reduction of mortality in human populations, health promotion in the community and reduction of costs of healthcare organizations for people and communities in the country (Wynd, 2006; Jennings-Sanders, 2004; Gebbie and Qureshi, 2002).

Past experiences have shown that in the occurrence of accidents and disasters, nursing staff experience and having a high level of competence in advanced nursing services, is very important (Jennings-Sanders, 2004). These groups often play the role of managing limited resources, and the services they deliver are for saving lives, so it is important to know how they provide services and prepare for them (Wetta-Hall et al., 2006). With regard to the specific circumstances of disasters and nurses' encounter with thousands of dead people, injured people, many destroyed buildings and limited resources, the need for specific skills to prepare for nursing interventions in these unusual situations is very important. The models can serve as a guide to nurses for better performance on tasks to help in this situation (Khankeh et al., 2007). Therefore, there is a need to review existing models in order to learn about disaster nursing, and practical recommendations to improve nursing care and health services in disasters (Khankeh et al., 2007; Jennings-Sanders, 2004). In some studies, the importance of effective models for health care and coordinated response in the event of disasters has been emphasized (Wynd, 2006; Jennings-Sanders, 2004). Nursing services within the context of models based on culture can be effective in reducing injuries and impact from disasters (Khankeh et al., 2007).

The objective of this study was to evaluate the models and patterns available to nurses during disasters.

2. Methods

2.1. Search strategy and selection criteria

2.1.1. Electronic searches

The following databases were searched: Scopus, MEDLINE through PubMed, ISI Web of Science, Cochrane Library, Cumulative Index to Nursing and Allied Health (CINAHL) and Google Scholar with no limitation of type of articles, between 1st January 1980 and 31st January 2016.

2.1.2. PubMed search strategy

MeSH tags were found in PubMed. The details of the PubMed database search strategy and syntax are sequentially provided below.

1. Disaster
2. Emergency
3. Nursing
4. Nurses
5. 1 or 2 or 3 or 4
6. Model
7. Theory
8. Pattern
9. Package
10. 6 or 7 or 8 or 9
10. 5 and 10

[disaster (tiab) OR emergency (tiab) OR nursing (tiab) OR nurse (tiab)] AND [model (tiab) OR theory (tiab) OR pattern (tiab) OR package (tiab) OR].

2.1.3. Other resources

Reference lists of relevant primary studies, reviews and key journals will be searched for in additional studies.

2.2. Data extraction and analysis

Data extraction was carried out by two independent researchers. Two data collection forms were developed, and after piloting, they were used for data extraction. The first one included the general characteristics of articles including model name, year of publication, comprehensiveness, target nurses population (the model was developed for them). The second form was used for identifying details in each model. According to the study objectives, extracted data were analyzed in terms of target nurses population, methodology of model development, domains evaluated in each model and qualitative assessment.