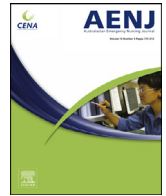




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Research paper

Experiences of rural and remote nurses assisting with disasters

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ABSTRACT

Background: Globally, disasters are on the rise. Nurses play a significant role in responding to such events but little is known about rural and remote nurses' experiences.

Methods: A national cross-sectional survey of regulated nurses (registered nurses, registered psychiatric nurses, licensed practical nurses and nurse practitioners) in rural and remote Canada provided the data (n = 2465) for the logistic regression of predictors of assisting with a disaster event within the last five years. The types of disaster events were also examined and open-ended responses were explored to reveal nurses' perspectives.

Results: Nurse type, age, region of employment, employment status, number of rural communities worked, distance to advanced referral centre, remote community, personal-professional boundaries, burnout and work engagement were significant factors related to assisting with a disaster event. Open-ended data alluded to the importance of pre-disaster preparation, and the difficulties experienced when personal-professional relationships are impacted during a disaster.

Conclusions: Nursing education curricula needs to include information about disasters and the nurse's role. Continuing education opportunities and preparation for nurses should be offered in the workplace. Psychosocial supports to assist rural nurses who attend to disasters in their workplace will help them deal with issues such as the blurring of personal-professional relationships.

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Disasters are on the rise worldwide; over the last 20 years, 90% of disasters in the world were caused by floods, storms, heatwaves and other weather-related events [1]. All indications are that natural disasters are increasing inter-related with climate change [1]. Disasters result in significant economic and health consequences and point to the need for well-prepared health personnel to address both individual and community health problems that arise. In general, rural and remote areas (herein referred to as rural) experience specific kinds of natural disasters related to the regional geography and landscape. For example, wildfires are a common threat to the rural environment and the people who live there. It is therefore important that health personnel who live in rural areas are prepared to deal with disasters that may occur. This article focuses on findings from a national survey among rural and remote regulated nurses (Registered Nurses, Nurse Practitioners, Licensed Practical Nurses, Registered Psychiatric Nurses); our analysis focuses on a

sub-group of nurses who responded to questions about experiences with a disaster and includes a discussion of the type of disaster and their role in disaster management. Implications for nursing education and for continuing education for rural and remote nurses are discussed within the International Council of Nurses/World Health Organization (ICN/WHO) Disaster Nursing Competencies framework [2].

Introduction

Disasters in Canada

Natural disasters, which include floods, wildfires (also referred to as bushfires) and earthquakes, are unexpected and often catastrophic events that impact people and their livelihood. The Canadian Disaster Database bases the definition of a disaster on the EM-DAT (Emergency Events Database) from the Centre for Research on the Epidemiology of Disasters (CRED): to be considered a disaster, an event must meet one of the following criteria: 10 or more people killed; 100 or more people affected through injury, evac-

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uation or being homeless; an appeal for national or international assistance; be of historical significance; and, significant damage or interruption of normal processes preventing the community from recovering on its own [3]. In 2014, 107,000,000 individuals were affected worldwide by disasters [4]. In 2014, a total of more than 12.4 million Canadians 15 years and older noted that they had personally experienced a disaster within their community in their lifetime [5]. In this same year, most Canadians were affected by floods (39.1%), storms (37.7%), wildfires (18.8%) or extreme temperatures (4.3%) [6].

In North America, the intensity and frequency of disasters has changed due to factors such as lower snowfall leading to a drier landscapes, infestation of insects such as the pine beetle making the forests more vulnerable to fire and warmer temperatures in spring and summer [7]. In rural areas of Canada, wildfires are more common disasters and can overwhelm rural areas that are limited in infrastructure, personnel and access to support to assist with response and recovery from a disaster.

The roles of nurses in disasters

Nurses are one of several health professional groups that are expected to be involved with disaster response and recovery; given their workplaces include institutions such as hospitals or community-based [8,9]. It is evident that the critical challenges of disaster response has never been greater. Nurses are in a unique position to take on significant roles during disaster events considering the fundamental front-line and diverse nature of their practice [10]. However, there are limited studies that have addressed nurses' knowledge and preparation in managing disasters. One exception is a study conducted in Saudi Arabia [11] with military and government hospital nurses which found that military nurses had more knowledge about disasters and that both groups gained their knowledge through disaster drills. A review of the literature on disaster preparedness and response of Australian public health nurses highlights numerous concerns including the scant literature on disaster nursing roles, lack of consistent and accessible education programs for health care professionals, and no inclusion of disaster education in undergraduate nursing curriculum [9]. However, none of this literature focused on rural nurses and their role in disasters.

Rural nurses are in a unique position in smaller communities to be instrumental in the management of disasters as they are easily recognized by community members and are familiar with local available infrastructure (such as halls and other buildings useful as evacuation centres), community patterns and events (agricultural and hunting seasons, celebratory events), and the local leadership (elected officials such as mayors and community leaders of volunteer groups and organizations). In addition, nurses in general are trusted by the public [12]. Nurses who practice in rural settings have a higher degree of visibility in their communities and may be heavily relied on for disaster response expertise and educating and supporting community members during disaster events [13]. Although some areas of the literature has focused on the willingness of nurses to attend work in a disaster [14,15]; rural nurses have no such choice. Within the context of rural nursing practice, it is not so much the willingness of nurses to respond and assist during a disaster event, more so the necessity to respond based on the limited number of health personnel qualified and/or available.

Disasters are not just one event in time, but typically follow a series of inter-related phases: pre-incident, incident and post-incident [2]. The ICN Framework of Disaster Nursing Competencies was developed to specifically highlight competencies for nurses within the Disaster Management Continuum, which combines the phases of the disaster with specific objectives [2]. The strength of the ICN/WHO [2] document is the focus on specific competencies for nurses in disaster situations by each of the disaster phases and

within an international context. However, a limitation is that there is no differentiation between urban and rural nurses and the different roles undertaken by nurses within a specific geographic context [13]. For example, the nurse is expected to evaluate health needs and resources and collaborate with the disaster response team. In rural areas, the nurse is often part of the disaster response team and in isolated areas can be the lead for the disaster response. There is some literature that has focused on the willingness of nurses to attend work in a disaster [14], however, rural nurses in Canada commonly do not have a choice. They must attend work during such events because of the limited number of health personnel that are available.

There is limited understanding about the role of nurses in general related to disasters [16] and rural nurses specifically in disasters with most published articles focusing on disaster preparedness in settings such as rural hospitals [8,17,18]. An exception is an application of the ICN/WHO [2] competencies by rural nurses in a wildfire context [13]. These authors emphasize the unique role of rural nurses in their communities and how the nature of these communities can make it challenging to meet the competencies. One example they provided was the difficulties noted with the care of vulnerable populations in the wildfire studies due to the physical isolation of the community itself or where the vulnerable lived, and the decreased availability of local infrastructure including the lack transportation for those who were defined as vulnerable.

Increasingly, inter-relationships are being identified between climate change and disasters; some authors are now focusing on the role of nurses in climate change and automatically subsuming the role of nurses in disasters within this rubric [19]. Although the relationship between climate change and disasters is important, there is a need to better understand disasters themselves in a variety of geographic contexts along with their health related impacts. In order to improve disaster planning and health care responses, nursing research on disaster preparedness and response [9,20] and nurses' roles in disasters [16] are both needed. The aim of this paper is to present the information that was generated about the role and experiences of rural nurses in Canada in regards to assisting with disasters in order to provide direction for nursing education and practice.

Methods

Design

The data analyzed in this article is based on the cross-sectional survey results generated from the Rural and Remote Nursing Practice Study II [21] a replication and extension of a study of rural RNs that took place over 2001–2004 [22]. The current study discussed here is based in a Primary Health Care—Health Human Resource framework which delineates four dimensions: individual, workplace, community and nursing practice to describe rural and remote nursing practice. Our particular focus is nursing practice by rural and remote nurses in regards to disaster response.

Setting

For this study, we applied the Rural and Small Town (RST) definition that refers to residence in communities that are outside the commuting zone of urban areas with 10,000 or more inhabitants [23,p.7].

Sample

The survey, which used a systematic sampling approach, included all regulated nursing professions in Canada; Registered

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