SPECIAL CONTRIBUTION: HIGHLIGHTS FROM THE LAUNCH CELEBRATION SEMINAR OF HEALTH EMERGENCY AND DISASTER NURSING

Nursing research in disasters: The possibilities and promises

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INTRODUCTION
The recent increases in natural and man-made disasters have placed an imperative emphasis on disaster planning and implementation of evidence-based practice. Understanding the role of nurses in disaster responses is part of that preparation and implementation. We know that research advances nursing practice. It shapes health policy, and it leads to improved outcomes for people everywhere. Because of nurses’ unique role with patients, they participate in all aspects of a disaster response, including evacuation, triage, physical and psychological care at the scene and afterward, case finding, screening measures, vaccinations, and disease surveillance (Wall, in press). A professional journal provides a way to document collectively what we are learning about disasters in all of these areas, and it promotes academic exchange among professionals. In this article, practical tips for writing will be discussed that can be useful to students and other beginning writers who are starting their publication trajectories. I then will comment on how important writing about our research is from my own experience. The paper will end with a discussion of challenges for researchers interested in disaster nursing.

TIPS FOR WRITING
There are several online sources that discuss tips for writing, and this section summarizes two, one by Goins (n.d.) and another by Murray (2013). When beginning to write, it is important to first look at the journal guidelines and follow them. If the journal uses American Psychological Association (APA) Style, then follow those guidelines for citations, headings, subheadings, how to write numbers, how to present tables, etc. Then, develop a writing plan, and it is here that experts suggest developing an outline. In order to get the reader’s attention, the first paragraph should give the rationale for the manuscript. Are you providing a review of literature? Are you critiquing another manuscript? Are you exploring a certain topic in disaster nursing? Are you presenting a grounded theory, phenomenological, or historical study? With any paper, it is important to describe the context of the disaster that is studied. Who was involved? Where did the disaster occur? What happened? Why? When? Many writers like to set goals for themselves. I write a little bit every day, even if it is just a sentence. Or, your goal might be to critique 10 articles for your literature review section on a certain day of the coming week. Choose a special place to write that is separate from where you do your other activities, so that this becomes a special space. When you enter it, you are ready to write. All writers need feedback from others, and it is often necessary to write multiple drafts or have multiple revisions. When a reviewer’s comments come back, analyze them to determine what exactly are they asking you to do. And do not get discouraged; revise and resubmit as soon as possible if asked (Goins, n.d.; Murray, 2013).

When publishing research in a journal, the following tips should be considered. For quantitative and qualitative research reports, a typical order is to first write the introduction, then methods (study sample, data collection tools or questions asked), data analysis, results, discussion, limitations, and conclusion. For historical research, the purpose should be noted in the first paragraph and research questions framed within their historical context. When writing about the background and significance, the writer should include the broader context and implications.
impacts of the research. Like all scientific research, historical research includes a review of literature and a statement about where more work is needed. The method is historical, which is not highly specific or consistent. Basically, it involves a description of how the researcher sought answers to the research questions and the primary and secondary sources used. The paper also should have a scholarly argument or thesis, which involves gathering the evidence from the sources and analysing that evidence. The conclusion should answer the “so what?” question.

**SAMPLE STUDIES ON DISASTERS**

There are many examples of research on nursing in disasters. One of the topics for study includes how vulnerable groups of individuals require special attention during and after a disaster. In a collaborative study, Terzioglu (2011) and volunteers from the Turkey Family Planning Association in Ankara, Turkey, wanted to examine the effects of earthquakes on family health, and they studied the Marmara earthquake that struck northwestern Turkey in 1999. It caused 17,000 fatalities, 32,000 injuries, an estimated 20,000 collapsed buildings, and more than 250,000 displaced persons. The rationale for doing the study was that long-term effects of earthquakes on health status have not been clearly defined. However, serious post-earthquake psychological depression can occur while other people suffer severe social and economic problems. These issues may continue for quite a long time. Thus, it is of utmost importance to begin rehabilitation activities in the earthquake area so as to ensure that individuals preserve their health, the society recovers its psychological and social strength, and people are provided treatment when they need it (Terzioglu, 2011).

Terzioglu and her colleagues studied people who had to stay in tents as a result of the loss of their houses, and they aimed to analyse the general effects of the earthquake on the family health of people in one tent city. There were 600 tents in the city, with nearly 2,500 people. This was a descriptive study of a small sample of females, males, and a youth group, and they used a questionnaire. They found that people in this tent city kept a balanced and healthy diet thanks to the military forces, which met their nutritional requirements. But health issues related to reproductive health were also important. Hygiene and bathing were problems, and a significant number of people had urinary problems, either infections, pain, or other issues. They concluded that training programs should be prepared for the prevention of urinary tract infections and the improvement of general hygiene habits. They also concluded that teenagers needed to be kept busy, because many had nothing to do, and their sexual activities increased. Again, the study spoke to vulnerable groups of individuals and the special care they required after a disaster. Along these lines, nurses need to educate professionals and survivors about life after disasters (Terzioglu, 2011).

Examinations of past disasters have been informative about the need for various methods of emergency preparedness. One study looked at the impact of power outages on hemodialysis centers in the Washington, DC, Virginia, and Maryland areas after hurricanes in 2012. The authors used a semi-structured interview for charge nurses or supervisors, who were selected from a sample of dialysis centers that were affected. The researchers contacted 90 centers, and the response rate was 90%. Of the centers that were affected, the results showed that most did quite well. They either had back-up generators, had a plan to get generators delivered quickly, or had an evacuation plan prepared in case patients needed to be transported to other dialysis centers. The dialysis centers in this study were able to sustain continuity of care by implementing these procedures (Abir et al., 2013).

From discussions about the skill level needed to safely care for patients after a disaster to the issues of practice guidelines, nursing history can provide the evidence for shaping our understanding of disaster responses. In my own work on the history of nursing, I have been interested in nurses’ ability to adapt as they respond to disasters. Nurses’ activities immediately after the San Francisco earthquake and fire in 1906 can be insightful. Yet searching for primary source documents about disasters can be problematic because records are often lost or destroyed. Some sources were available to me, however, and these included newspapers, diaries, letters to family members and other personal correspondence, official histories from organizations such as the American Red Cross, city records, and photographs. Oral sources can be helpful, but when using them, one has to keep in mind their limitations. Problems such as memory loss can result if a letter was written or an interview or oral history was obtained some years later. Yet, Scanlon (2002, p. 267), who wrote about the 1917 Halifax, Nova Scotia, ship explosion, found that “disasters are so dramatic that many vividly remember what happened even three-quarters of a century earlier.”

In my study on the 1906 San Francisco disaster, I found primary sources in the San Francisco Public Library, the Bancroft Library, and the California Historical Society in San Francisco (Wall & Kelly,
2011). Other primary sources included journal articles written by nurses who had survived; some told their stories in the American Journal of Nursing. My conclusions validate the finding of sociologists who assert that health-care workers and survivors are resilient when disasters strike (Drabek & McEntire, 2003). As an example, after the San Francisco earthquake occurred, nurse Lucy Fisher and another nurse immediately donned their uniforms and went to a makeshift hospital. The fact that they put on their uniforms gave them legitimacy, because local officials allowed nurses to enter while turning away others. In this first-hand account in the American Journal of Nursing, Fisher wrote about the chaotic scene she faced with mattresses all over the floor. Because an improvised surgery was already functioning, she decided to search for other critical patients who might be overlooked in the confusion. She found blankets, hot water bags, and coffee and offered them to those who needed it. She also observed people who were cyanotic or whose pulses were feeble. In the process, she and her friend pinned pillowcases to their uniforms that held dressing supplies so that they could do dressing changes. They also gave pain medication via hypodermic injections. Significantly, to avoid further confusion and danger of drug duplications, the nurses pinned tags onto patients with the name and quantity of the drug and the time it was given (Fisher, 1906).

Another nurse was Nellie May Brown, who nursed at a camp in Oakland. Her letter to her family was helpful in learning about how she felt about working in a disaster zone. She wrote that she was “working in the thick of the suffering—at last experiencing the horrors of the field hospital” and was having the “experience of a lifetime” (Brown, 1906).

Disaster research can also inform us about gender. Debates abound as to what women and men do in disasters. Most results show a gender differentiation: women were restricted to domestic duties where they provided sympathy and psychological support while men did the work at the disaster scene (Enarson and Morrow, 1998). In a study of nursing in disasters, however, something different is seen. My sources illustrate that nurses’ activities definitely were not restricted to domestic labor and merely providing sympathy. They made independent decisions in crisis situations where time was critical to whether or not patients lived or died (Wall, in press).

So why is all of this important? Disaster researchers argue that “some groups of people are known for their ability to remain cool and stay clear-headed under pressure, including veteran military officers, fire, and police commanders” (Rodriguez, Quaranelli & Dynes, 2007, p. 49). As I have written elsewhere, I suggest that mayors of cities and disaster managers can also benefit by observing nurses who work every day in cooperation with other health-care workers, often under extreme pressure. Nurses are ready for contingencies. As rescue operations shift from finding survivors and meeting the physical needs to giving attention to men, women, and young people as they go about their daily lives after the disaster, nurses can be helpful in many ways (Wall, in press).

**CHALLENGES IN DISASTER RESEARCH**

The challenges of studying disasters can be daunting. After the San Francisco earthquake, the nurses viewed themselves as performing meaningful work, and they felt rewarded. They did not talk about fear or panic. What sources often do not mention is the perspective of nurses and other health-care workers who did not volunteer to help, and we need more studies on this aspect of a disaster response. In particular, this involves research about safety and security for health-care workers and the health problems to which nurses are exposed during and after disasters. This research can help us understand why many may NOT want to respond. Indeed, not all nurses are resilient, nor do they have to. During the SARS epidemic in Toronto, Canada, in 2003, some nurses chose not to lend assistance, because they were afraid of contagion and of infecting family and friends. Indeed, studies revealed that the infection rates among nurses who worked in emergency departments and intensive care units ranged from 10.3% to 60.0% (Maunnder et al., 2003; Varia et al., 2003).

Another study has been conducted on the 1995 sarin gas attack in Tokyo, and it can be used as a guide for others. From a worldwide historical perspective, the Tokyo subway sarin attack represents the largest disaster caused by nerve gas in peacetime history. Prior to the attack, Tokyo had disaster plans, but they mainly dealt with earthquakes, fires, and floods. No one anticipated a chemical attack. We know that doctors and nurses responded. St. Luke’s Hospital received most of the patients because it was the closest hospital. A control center was set up in the Emergency Department, and on-duty residents, staff doctors, nurses, clerks, and volunteers were active. Off-duty staff members were called in, as well as the staff and students of St. Luke’s College of Nursing (Okumura et al., 1998).

The hospital staff wore gloves and masks, but only those ordinarily used during operations and not for the
setting of chemical contamination. They had no chemical-resistant clothing and no gas masks. A study of secondary exposure to the hospital staff was carried out by means of a questionnaire. The study items included sex, profession, symptoms, and the main place of work. Of the 472 persons from St. Luke’s, 110 persons (23%) complained of acute poisoning symptoms, all female. Most were nurses and nurses’ aides. Many survivors were managed in the chapel, and although this area was a useful emergency care site, ventilation was poor. Nearly half of the staff working in this area complained of acute poisoning symptoms. No increased ventilation was provided anywhere in the hospital during the first day. Fortunately, injury to hospital personnel was mild, and nobody needed medical treatment (Okumura et al., 1998). But this highlights the need for more studies, and it also complicates the notion of heroism during disasters.

A second challenge involves conflicts over authority, which frequently occur between established local agencies and outside groups. And we need more studies here. For example, after the Haitian earthquake of 2010, many countries dispatched rescue and medical teams, engineers, and support personnel. Volunteer non-government organizations (or NGOs) also responded. The existence of numerous groups at disaster scenes, who had over-lapping agendas, was counter-productive and created confusion and unhelpful competition (Currion & Hedlund, 2010).

Another challenge is, “Whose story is recorded? A large gap is the voice of the silenced, be they minorities, the poor, or others excluded from power. This could result because they may have lacked the means to document personal experiences, or librarians or researchers simply have not sought their stories (Frudkin, 2005; Wall, in press). One strategy to remedy this is to ask survivors to tell their own stories from a first-person perspective so that, in the future, the mainstream media is not the only voice we hear. The Internet is especially helpful in soliciting these voices. Another challenge related to finding the voice of the silenced is the need for larger samples when we study responders. Many volunteers respond, and they are from diverse populations. To get a meaningful analysis, we need sizable samples if we are studying large populations such as responders to disasters.

To understand and effectively deal with these many challenges, disaster researchers argue that multi-disciplinary approaches are needed. They mention meteorologists, engineers, anthropologists, lawyers, political scientists, economists, journalists, and others (Drabek & McEntire, 2003). I suggest that as we study these challenges, we cross professional boundaries to include nurses in any research on disaster response. And we need to write about our work.

REFERENCES


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