ORIGINAL RESEARCH

What Are the Research Needs for the Field of Disaster Nursing? An International Delphi Study

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Abbreviations:
WADEM: World Association for Disaster and Emergency Medicine
WSDN: World Society of Disaster Nursing

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Abstract

Background: Internationally there is an increasing amount of peer-reviewed literature pertaining to disaster nursing. The literature includes personal anecdotes, reflections, and accounts of single case studies. Furthermore, issues such as the willingness of nurses to assist in disasters, the role of nurses in disasters, leadership, competencies, and educational preparedness for nurses have been the focus of the literature.

Aim: The aim of this research was to determine the international research priorities for disaster nursing.

Method: This research used a three-round Delphi technique. The first round used a face-to-face workshop to generate research statements with nursing members of the World Association for Disaster and Emergency Medicine (WADEM). The second and third rounds included the ranking of statements on a 5-point Likert scale with nursing members of WADEM and the World Society of Disaster Nursing (WSDN). Statements that achieved a mean of four or greater were considered a priority and progressed.

Results: Participants were from multiple countries. Research statements were generated in the areas of: education, training, and curriculum; psychosocial; strategy, relationship, and networking; and clinical practice. Psychosocial aspects of disaster nursing ranked the highest, with five statements appearing in the top ten research areas, followed by statements relating to: education, training, and curriculum; clinical practice; and finally, strategy, relationship, and networking.

Conclusions: Future disaster nursing research should focus on the area of psychosocial aspects of disaster nursing, in particular, both the psychosocial needs of a disaster-affected community and the psychosocial wellbeing of nurses who assist in disaster health activities.

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Introduction

Background

A disaster can be defined as an event that relies on the need for external resources to maintain operation capacity of essential services, following an interruption of the normal functioning of a community or service.[1] One such resource includes the mobilization of health professionals, including nurses, to provide assistance to establish, maintain, or re-establish an operational heath service to the effected community following a disaster event.[2] It is acknowledged that, internationally, nurses are actively involved in the health assistance to disasters. In addition to assisting when disasters happen, nurses are involved in many other aspects of disaster health, including being providers of disaster education, undertaking research, and developing policy.

There is an increasing amount of literature pertaining to the work of nurses in disasters. In particular, this literature has included personal anecdotes, reflections, and accounts of single case studies from single disastrous events.[3,4] More recently, the amount of exploratory research pertaining to disaster nursing is increasing. Issues explored in the literature include the willingness of nurses to assist in disasters,[5-7] the role of nurses in disasters,[8-10] leadership,[11-14] competencies,[15,16] and educational preparedness of nurses.[17-22]

While the volume of research and evaluation of disaster research pertaining to nursing is increasing, it is beneficial to have an agreed list of research areas that would assist the larger nursing population in enhancing the theoretical understanding of disaster nursing. This enhanced understanding of disaster nursing would better prepare the nursing population to assist in, and take a leading role in, nursing aspects of disasters.

Aim

The aim of this research was to determine the international research priorities for disaster nursing.

Methods

Design

This research addressed its aim by implementing a three-round Delphi technique interspersed with controlled feedback that sought to gain the most reliable ranking of research priorities in the field of disaster nursing. This design is appropriate for many reasons. It is a method for structuring a group's communication process, allowing a group of individuals as a whole to deal with a complex situation.[23] It provides relevant and accurate information to facilitate decision making and determining the extent of agreement over a given issue such as research priorities for the field of disaster nursing.[23] There is currently a lack of international empirical evidence for research priorities in the field of disaster nursing, and this study will address this gap.[24]

Data Collection

Round One—The first round of this research was held at the 18th World Congress on Disaster and Emergency Medicine, May 2013 in Manchester, United Kingdom. Participants of this round included members of the World Association for Disaster and Emergency Medicine (WADEM) Nursing Section. All participants (N = 37) voluntarily contributed to this round, which was conducted as a workshop to generate statements relating to possible research questions. During this workshop, 39 statements were generated. Following the workshop, the researchers reviewed all statements. Once reviewed, duplicate statements were combined while some statements were split, yielding a total of 38 statements from round one.

Round Two—Nursing members from WADEM and the World Society of Disaster Nursing (WSDN) were recruited in a purposive manner using an e-mail distributed via the existing membership databases of WADEM and WSDN. Those wishing to participate voluntarily followed a link in the invitation e-mail, directing them to an online survey tool relating to this research project. The survey included simple demographic information and a list of statements generated in round one. Participants were asked to rank the research statements using a 5-point Likert scale with 1 representing the term "strongly disagree," 2 "disagree," 3 "neither disagree nor agree," 4 "agree," and 5 representing the term "strongly agree."

Round Three—Recruitment of participants for the third round was similar to that in round two: an invitation e-mail was sent to all nursing members of WADEM and WSDN. As each survey was anonymous and voluntary, this round may have included and/or excluded participants from the previous round. Additionally, this round included new statements that were suggested by the participants of round two and that were different from those already listed as statements from the first round.

Data Analysis

Debate exists in the literature pertaining to the most appropriate way to analyze Delphi studies.[23] However, the major statistics used in Delphi studies are measures of central tendency, in order to present information concerning the collective position of participants.[23,25] For this research, a research priority was considered if a statement had a mean score of four or greater. The statements from round one were all included in round two; those from round two that were considered a priority were subsequently included in round three. Again in round three, data analysis was undertaken using means of central tendency, whereby statements were considered a priority if a mean score of four or greater was achieved.

Protection of Human Participants

This research was considered and approved by the University of Canberra Human Research Ethics Committee, reference 13-07. Participants were approached via WADEM and WSDN. The researchers on this project did not directly contact any participant or nonparticipant. Participation in this research was voluntary and anonymous. Written consent was obtained from participants in round one. Consent was implied for rounds two and three where participants completed the online voluntary and anonymous survey. Nursing members of WADEM and WSDN who were nonparticipants of this research were not known to the researchers.

Findings

Participant Demographics

The participant demographics from all rounds of this research are outlined in Table 1.

Research Statements

Round One—A total of 38 final statements were included in the first round of this project (Tables 2-5).

Round Two—Of the 38 statements included in this round, 24 were considered a priority. During this round, 12 additional statements were generated by participants. Nine of these statements were added to the existing 24 consensus statements, while three were not added as they were repetitive of existing statements. Overall, 31 statements progressed to be included in round three.

Round Three—Of the 31 statements included in this round, 27 were considered a priority. The top ten priority statements and their associated areas of research are highlighted in Table 6.

Education, Training, and Curriculum

The topic of education and curriculum development was highlighted to be of particular interest in the early stages of this Delphi research project. This is evidenced by the 21 research statements that were generated pertaining to this topic. However, it is noteworthy that only 38% (n = 8) of the 21 statements were considered a priority (Table 2), and only two emerged within the top ten research priorities for disaster nursing (Table 6).

Psychosocial

All statements (100%, n = 5) regarding psychosocial aspects of disaster nursing were ranked as a priority area (Table 3) and all

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	Round 1	Round 2	Round 3
No. of Participants	14	23	16
Age: Mean (SD)	42.1 (10.6)	49.3 (9.9)	45.3 (9.9)
Gender: n (%)			
Male	5 (35.7)	3 (13.0)	4 (26.7)
Female	9 (64.3)	20 (87.0)	11 (73.3)
Country of Residence			
Australia	4	8	7
Brazil	1	0	0
Canada	1	2	0
Finland	0	1	1
France	2	0	0
India	0	1	0
Japan	1	0	0
Portugal	0	1	1
United States of America	5	6	7
Highest Qualification: n (%)			
Diploma/Hospital Certificate	0	1 (4)	0
Bachelor Degree	1 (7)	2 (9)	1 (6)
Graduate Diploma	1 (7)	2 (9)	3 (19)
Masters Degree	6 (43)	8 (35)	5 (31)
Doctoral Candidate	4 (29)	1 (4)	2 (13)
Doctoral	2 (14)	9 (39)	5 (31)
No. of Years Nursing	18.8 (10.9)	26.6 (10.9)	23.6 (10.2)
No. of Years with Interest/Expertise/Experience in Disaster Nursing	8.4 (4.8)	13.7 (10.2)	15.5 (11.0)

Table 1. Participant Demographics

psychosocial aspects of disaster nursing appeared in the top ten consensus statements. Additionally, psychosocial aspects of disaster nursing constituted the top three research statements overall. This was the only research area to achieve this level of prioritisation.

Strategy, Relationship, and Networking

While 64% (n = 9) of statements in this category were ranked as a priority (Table 4), only one research statement pertaining to strategy, relationship, and networks appeared in the top ten priority statements.

Clinical Practice

The majority of statements (71%, n = 5) relating to clinical practice were highlighted as a priority research statement (Table 5). Furthermore, two statements relating to disaster nursing clinical practice appeared in the top ten statements of research priorities.

Discussion

Participant Demographics

The participants of this research are representative of multiple countries from multiple continents, highlighting the international viewpoint of this research. The majority of the participants held either a Masters Degree, Doctoral Degree, or were Doctoral candidates. Additionally, most had been involved in the field of disaster nursing for more than eight years, and involved in nursing for more than 18 years.

Research Statements

Education, Training, and Curriculum—Interestingly, the statements of consensus pertaining to education, training, and curriculum focused on researching the way in which disaster nursing is taught and who teaches it, rather than what to teach, such as in

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Rank Order	Statements	Round 2 Mean (SD)	Round 3 Mean (SD)
1	Impact evaluation and measuring effectiveness of education on response and recovery outcomes are important	-[a]	4.4 (0.5)
2	A variety of disaster education methods must be implemented to meet individuals' as well as groups of nurses' needs	4.0 (1.0)	4.4 (0.8)
3	Nurses who educate others in disasters need to have knowledge of disasters	4.6 (0.6)	4.3 (1.2)
4	Clarity in nurses perceiving as their role in responding to a disaster and critical competencies they feel they need to respond to a disaster	-[a]	4.2 (0.7)
5	Disaster policy statement and a disaster management framework must be considered when developing disaster nursing curriculum	4.3 (0.6)	4.2 (0.8)
6	The disaster education needs of nurses in clinical practices are not sufficiently met	4.3 (1.0)	4.1 (1.0)
7	Core component of disaster nursing must be embedded in a revised curriculum	-[a]	4.1 (0.8)
8	The interval between training and refresher training needs to be assessed to ensure nurses are ready to respond to disasters	-[a]	4.1 (0.7)
9	It is essential for individual nurses to determine their own disaster nursing education needs	-[a]	3.3 (1.2)
10	There is a need to develop competencies for disaster nursing further	3.9 (1.1)	-[b]
11	Climate change must be explored and determined within the context of disaster nursing	3.8 (1.0)	-[b]
12	Student nurses must become conversant with nature of disasters faced in our communities and begin preparation towards disaster nursing	4.4 (0.9)	3.8 (1.2)
13	Level of requirements for disaster education would depend on areas where nurses are practising	3.7 (1.3)	-[b]
14	Current disaster education programs for nurses are best identified by scoping exercise implemented locally and nationally	3.6 (0.8)	-[b]
15	Undergraduate nursing students require disaster nursing training	4.1 (0.8)	3.5 (1.2)
16	There is an appropriate way to teach undergraduate nursing students about disaster	3.3 (0.9)	-[b]
17	Current disaster education programs for nurses are best identified by needs assessment	3.3 (0.9)	-[b]
18	The most appropriate level of disaster knowledge required by nurses would depend on specialty areas where they are practising	3.1 (1.1)	-[b]
19	Nurses who educate others in disasters need to have personal experience of assisting in a disaster	2.9 (1.1)	-[b]
20	There is a particular training method that is most effective for nurses	2.7 (1.0)	-[b]
21	The more experienced nurses require lesser amount of disaster education	2.2 (0.9)	-[b]

Table 2. Education, Training, and Curriculum Research Statements
[a]This statement was only included in round three as it was generated in round two.
[b]This statement was only included in round two as it did not reach consensus to progress to round three.

the intricacies of competencies or curriculum. This is not surprising as current disaster nursing literature has extensive discussions about education, training, and competencies.[15,16,26,27] Additionally, all statements pertaining to disaster nursing and undergraduate curriculum did not reach consensus. As such, the research suggests that disaster aspects of nursing curriculum are not a research priority area for disaster nursing. Furthermore, this may be the case as the current literature pertaining to disaster content in undergraduate and postgraduate curriculum has been explored in the literature.[20,21]

Psychosocial—As evidenced in the findings, psychosocial aspects of disaster nursing are highlighted as the primary key research priority area for disaster nursing. Psychosocial care relates to both the psychosocial or mental health needs of the community and to the psychosocial or mental health wellbeing of nurses who assist in disasters. There are established links between extreme weather events, such as bushfires, heatwaves, flooding, droughts, and earthquakes, resulting in an increased incidence of mental health problems, such as depression.[28] The mental health impacts of disasters are particularly well recognized

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Rank Order	Statements	Round 2 Mean (SD)	Round 3 Mean (SD)
1	Nurses must be effectively prepared to identify and manage psychosocial issues in a disaster	4.4 (0.6)	4.7 (0.5)
2	Psychosocial coping mechanisms are essential when dealing with disasters	4.4 (0.6)	4.5 (0.5)
3	Nurses must become aware of the needs for vulnerable populations and be sufficiently prepared to assist such populations	4.6 (0.5)	4.5 (0.6)
4	The advocacy role of nurses in disaster settings must be acknowledged and fostered	4.4 (0.7)	4.4 (0.7)
5	Determine common knowledge between existing area of study such as trauma study in psychology and psychosocial aspect in disaster nursing	-[a]	4.4 (0.7)

Table 3. Psychosocial Research Statements
[a]This statement was only included in round three as it was generated in round two.

Rank Order	Statements	Round 2 Mean (SD)	Round 3 Mean (SD)
1	Nurses must strengthen their collaborative approach with other professionals and professional groups in disaster settings	4.8 (0.4)	4.4 (0.6)
2	Lessons learnt from all types of nursing practice in disaster situations need to be recognised	-[a]	4.4 (0.9)
3	It is important for international nursing groups to network	4.6 (0.5)	4.4 (1.0)
4	There is need for a coordinated approach to disaster nursing education	4.6 (0.5)	4.3 (0.9)
5	The value of social media must be not overlooked. Social media need to positively assist in disasters and such assistance must be strengthened	4.2 (0.6)	4.3 (0.9)
6	Disaster nursing practices and skills must be reviewed	4.2 (0.7)	4.3 (0.9)
7	Having a health workforce model is important for disasters	4.2 (0.9)	4.2 (0.8)
8	Understanding the unique role of disaster nurses and utilising the existing global disaster nursing networks will strengthen the professional presence of disaster nurses	-[a]	4.2 (0.9)
9	Nursing groups should be structured globally, and a network implemented	4.0 (0.8)	4.1 (1.1)
10	Framework for a disaster workforce model needs to be clearly defined	4.4 (0.7)	3.8 (1.1)
11	There is scope for nursing groups focussing on disaster management to be well defined	4.1 (0.9)	3.4 (1.1)
12	A database listing nurses and their associated skills for disaster assistance should exist	3.9 (1.0)	-[b]
13	Release of nurses for disaster response is a leadership decision.	3.9 (1.0)	-[b]
14	The collaborative efforts of disaster nurses with inter-services, hospitals and governments are evident and well recognised	3.2 (1.0)	-[b]

Table 4. Strategy, Relationship, and Networking Research Statements
[a]This statement was only included in round three as it was generated in round two.
[b]This statement was only included in round two as it did not reach consensus to progress to round three.

within populations such as rural people, farmers, and rural men.[29] The immediate and enduring adverse mental health impacts of both environmental and natural disasters are associated with emotional distress related to experiences of fear and loss, and later trigger longer-term helplessness and depression.[30] Furthermore, there are a number of published works pertaining to the psychosocial needs of communities following disasters and the longitudinal psychosocial effects of disasters.[31] However, the link between nurses in a disaster and the psychosocial needs of a community pre, during, and post disaster is scantly reported in the literature.[8] This link is an area that could be the focus of further research, particularly in exploring the nurses' role in enhancing the psychosocial wellness of a disaster affected community. When considering the nurses

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Rank Order	Statements	Round 2 Mean (SD)	Round 3 Mean (SD)
1	Global best practice evidence must be synthesised and regularly documented	4.3 (0.6)	4.4 (0.6)
2	Patient safety should be considered in a disaster	4.6 (0.5)	4.4 (0.9)
3	Disaster nursing areas of studies must focus on evidenced base practice	-[a]	4.3 (0.8)
4	Aspects of disaster nursing relate to altered standards of care	4.0 (1.0)	4.1 (0.8)
5	The roles of nurses in specific situations such as the community, public health and hospitals must be distinguished and determined	4.2 (0.9)	4.1 (0.9)
6	There is a particular scope of practice for disaster nursing	4.0 (1.0)	3.7 (1.2)
7	Protocols related to disaster nursing must be grouped in a database for reference purposes	3.8 (0.9)	-[b]

Table 5. Clinical Practice Research Statements
[a]This statement was only included in round three as it was generated in round two.
[b]This statement was only included in round two as it did not reach consensus to progress to round three.

Rank Order	Statements	Mean (SD)	Area
1	Nurses must be effectively prepared to identify and manage psychosocial issues in a disaster	4.7 (0.5)	Psychosocial
2	Psychosocial coping mechanisms are essential when dealing with disasters	4.5 (0.5)	Psychosocial
3	Nurses must become aware of the needs for vulnerable populations and be sufficiently prepared to assist such populations	4.5 (0.6)	Psychosocial
4	Impact evaluation and measuring effectiveness of education on response and recovery outcomes are important	4.4 (0.5)	Education/ Curriculum
5	Global best practice evidence must be synthesised and regularly documented	4.4 (0.6)	Clinical Practice
6	Nurses must strengthen their collaborative approach with other professionals and professional groups in disaster settings	4.4 (0.6)	Relationship/ Networking
7	The advocacy role of nurses in disaster settings must be acknowledged and fostered	4.4 (0.7)	Psychosocial
8	Determine common knowledge between existing area of study such as trauma study in psychology and psychosocial aspect in disaster nursing	4.4 (0.7)	Psychosocial
9	A variety of disaster education methods must be implemented to meet individuals' as well as groups of nurses' needs	4.4 (0.8)	Education/ Curriculum
10	Patient safety should be considered in a disaster	4.4 (0.9)	Clinical Practice

Table 6. Top Ten Research Statements and Research Areas

themselves, limited literature discusses the psychosocial wellbeing of nurses.[32,33] As such, future research should focus role of nurses in providing psychosocial support during disasters and the psychosocial wellbeing of nurses who assist in disasters.

Strategy, Relationship, and Networking—When compared to other research areas, strategy, relationship, and networking represented an area with the least focus as a priority research area from this research. However, of those statements that were identified as a research priority, these relate to the need to work collaboratively and strategically in a coordinated approach to researching education, curriculum, psychosocial aspects of care, and clinical practice. Possibly, the research statements associated with this research area are tenuous and less concrete than those seen in other areas.

Clinical Practice—Statements related to patient safety, standards of care, and use of evidence in disasters were highlighted as priority statements in the research area of clinical practice. It is no surprise that disaster nursing clinical practice is an area of research priority, as the subspecialty of disaster nursing is in its infancy, and due to the nature of disasters, the understanding of clinical practice in this context is underdeveloped. Personal anecdotes, reflections, and descriptive accounts of nursing in

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disasters commonly discuss an aspect of clinical practice.[8,32] In particular, the clinical aspects of care in a disaster are discussed in the broader health perspective of the health response, instead of focusing specifically on the nursing role in providing clinical care.[34–36] As such, it is reasonable to expect that further research pertaining to clinical practice would be a logical progression from the current understanding in the literature. This research should be undertaken using an all-hazards approach to develop a comprehensive understanding of nursing practice in all disaster contexts.

Study Limitations

This research was undertaken with nurses who have membership with WADEM and/or WSDN. As such, the participants in this research may not represent all nurses who have insights into disaster nursing. For example, if this research was undertaken using a different recruitment strategy, such as recruiting participants from a different nursing association or society, the statements and level of consensus may have been different.

Conclusion

This is the first international study to generate research statements and consensus regarding the research priorities for disaster nursing over the next five years. Using a workshop to generate statements and two survey rounds, a number of consensus research priorities for disaster nursing were identified. Overall, the key research priority area identified pertains to the psychosocial aspects of disaster nursing. The research areas of clinical practice, education, training, and curriculum were identified as lower priority for disaster nursing research. Finally, the areas of strategy, relationship, and networking were identified as the lowest research priority areas.

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