The HOPE model for disaster nursing – A systematic literature review

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1. Introduction

Most of the nurses in the world will never be deployed to a disaster area but since disasters may hit anywhere, without previous notification, all nurses need to have a basic understanding of disaster nursing [1]. Disasters occur throughout the world, and wherever they hit, they cause a substantial amount of human suffering as well as community disturbance. The number of people affected by disasters is rising, and in 2016, over 569.4 million people were affected, the majority by natural disasters [2]. Disaster can be defined as: '*a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic, and environmental losses and impacts*' [2]. This definition implies that the consequences of an event are dependent not only on the event itself, but also on pre-existing factors and post-existing factors such as the response [3]. Sudden-onset disasters, including natural disasters (e.g., earthquakes) and man-made disasters (e.g., accidents or terror attacks), can have several causes and are most often characterized by being unexpected, unpredictable, uncertain, and unplanned. They demand specific methods, knowledge, and strategies to be managed in both all phases of disaster management (i.e., mitigation, preparedness, response and recovery [3,4]. Since history, nurses have played an important part in the disasters in all phases, including response and disaster relief, rehabilitation, recovery and mitigation phases. The focus for this review is the response phase. Nurses are in place whenever and wherever disaster hits, and they also respond by supporting their colleagues and affected people in both within the country and abroad [1].

Several researchers have made efforts to summarize competencies needed for nurses responding to disasters, but still there is no agreed universal definition of such competence [5–7]. Also, there are few definitions of what disaster nursing actually is, and how it can be described from a clinical point of view. A previous literature review of disaster nursing preparedness concluded that nurses feel ill prepared for disaster response [8]. In order to prepare and to understand what disaster nursing is about, descriptions of and models are needed, but the few existing models of nursing in disasters are all dedicated to specific areas or specific disaster situations [9].

Therefore, this study aims to present a model for the concept, context, and content of disaster nursing by conducting a systematic literature review of real-life experiences of disaster nursing in the response phase.

2. Method

2.1. Design

This systematic literature review explored peer-reviewed publications that described the concept, context or content of disaster nursing. Thematic synthesis [10] was used to conduct the review. The strength of this methodology is its potential to enable conclusions to be drawn on the basis of common elements of otherwise heterogeneous studies.

2.2. Search strategy

The primary databases utilized for search of literature were

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Medline, CINAHL and PsychINFO (from inception to the 5th of February 2018). Key words included different combinations of the following fixed terms and/or free-text searches: 'disaster nursing', 'mass casualty', 'disaster ', 'disaster response', 'nurse', 'experience', 'deployment', 'terrorist attack 'and 'catastrophe' Also, a reference list search was made manually, but no further articles were identified by this search.

2.3. Inclusion criteria

Original articles were considered for review if they: (1) aimed to describe either disaster nursing as a concept, and/or the content of disaster nursing, and/or experiences of disaster nursing in a real disaster event; (2) were peer-reviewed; (3) were published in English; and (4) covered the response phase of any kind of a sudden-onset disaster event that occurred. Articles that included nurses as part of a sample with other professionals were excluded, as were articles that focused on measuring or describing specific competencies or measuring preparedness for disaster deployment. Both qualitative, quantitative and mixed methods studies were considered if answering to the inclusions criteria.

2.4. Quality appraisal

The quality of the included qualitative articles was assessed by using the tool constructed by Long and Godfrey [11]. For the quantitative articles, the CASP Cohort Study Checklist [12] was used. A comprehensive assessment of the quality (classified as high, medium or low) was made by the authors, first by each of the authors individually and then together. All articles were considered to be of medium quality (marked ** for sufficient quality), or good quality (marked *** for good quality) in the overview (see Table 1).

2.5. Data extraction

All text presented as results in the included articles, including quotations and Tables/Figures or numbers if present, was considered as data, and used in the thematic synthesis analysis [10]. In the original thematic synthesis, only traditional qualitative studies are included [10]. In this study, we also included two studies where qualitative surveys has been used to collect data on the content and/ or experiences from disaster nursing. The results from these studies were used in the same way as from the interview based studies, by extracting all results adequate for the aim of this study.

2.6. Thematic synthesis

The findings from each original article were combined into a modified thematic synthesis by both authors. In a first step, all text, figures or numbers that was presented as results and related to the aim of the synthesis were extracted from their original articles and put into an Excel document. The text units were then coded according to its meaning and content, described by Thomson & Harden as "line by line coding" in order to "translate" results from one study to another [10]. In this study, all text units got one code each. Thereafter, the codes were sorted into themes, covering from two to several different codes within the theme. The themes were named in order to capture the meaning of the codes grouped as a whole. Sometimes during this process, a text unit was re- coded or moved from one theme to another until all codes were sorted into one specific theme. The data extracted from the two survey based studies were treated in the same way as the interview based data, extracted into the Excel file, coded and so on. The themes internal relations and hierarchical structure were continually mapped during the analysis process, using pen and pencil. After this synthesis of the original articles, one main theme, three dimensions and four themes (stages) was identified.

The authors thereafter conducted an analytic analysis of the result. This analytic analysis means to 'go beyond' the content of the original articles and integrate the latent content of the findings into a new meaning has been said to be the core of the thematic synthesis [10]. The analytic analysis was made first by the authors independently and thereafter together [10]. Based on the synthesized, analytic analysis, a model for disaster nursing emerged.

3. Results

The search strategy yielded 1,735 papers. After checking for duplicates, 490 articles remained. A reading of the titles reduced the number to 259 articles considered relevant for thematic synthesis. The most common reason for being excluded at this stage was not reporting research data or not focusing on nurses. Thereafter, abstracts were read and papers not meeting the inclusion criteria were excluded. The remaining 52 articles were read, and 37 were excluded for not focusing nurses, or because it was not possible to distinguish nurses in the results or because the article was based on training or exercises (see Fig. 1).

The results are based on 15 papers describing the experiences, content or context of disaster nursing in the response phase of a sudden-onset disaster event. The included articles covered earthquakes (twelve articles), storms (four articles), undefined natural disasters (two articles) or human-made disasters (two articles) in China, Haiti, Iran, Japan, New Zealand, the United States of America (US) and other countries (not defined) (see Table 1). The nurses participating in the studies (n = 309) were from Australia, China, Indonesia, Iran, Israel, Japan, Kenya, New Zealand, Palestine, Saudi Arabia and the US. The majority were general nurses or nurses unspecified. In two studies, community health nurses participated and in one study, certified registered nurse anesthetists (CRNAs) were in focus. Mainly qualitative studies, using phenomenological, hermeneutic content analysis or narrative inquiry as method, were included. In two studies, survey data analysed with statistical methods had been used. Data collection had been conducted at various times since the disaster had occurred (see Table 1).

3.1. Quality assessment

From the 15 included articles, 10 were considered as good quality and five was considered as sufficient quality. The most common reason why the qualitative methods used were not considered as good quality was lack of information on the analysis process, or the study sample. In the two articles using mixed- or quantitative designs, lack of information about the survey construction reduced one of the articles quality.

3.2. Synthesis findings

The analysis resulted in two types of findings; one synthesis presented as one main theme, three dimensions of crossing borders: and a time-related process for the disaster nurse, from deployment to recovery, covering four themes (see Fig. 2). The thematic representation is presented in Table 2. Thereafter, the result from the analytical steps of the analysis will be presented as a model for understanding the content, essence and experience of disaster nursing.

In the results, the nurse will be referred to as 'she'. This does not exclude or value the gender of any nurse but should be seen as a practical way to discuss the nurse as a person.

Main theme: *Disaster nursing: crossing borders*

The main theme identified in the thematic analysis was *Disaster nursing: crossing borders*. The description of how to be faced with unbeatable challenges and manage them, covering several personal, professional and environmental challenges, provided the essence of the theme. The disaster nurse had to perform duties and manage challenges that she had never imagined or had to do before. In the context of a disaster, the role of the nurse changed, but still demanded self-efficacy

Table 1
Overview of included articles.

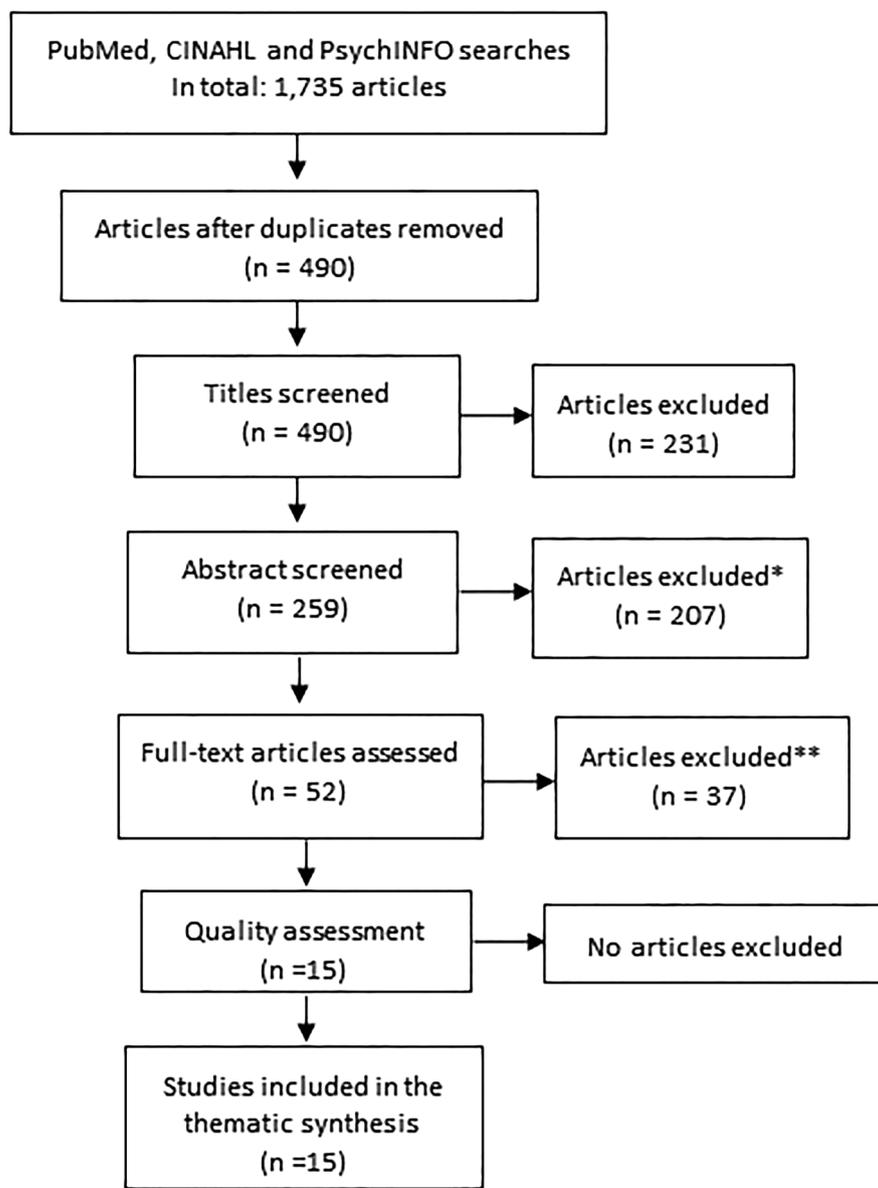| No.	Author/s and year of publication	Focus	Type of disaster event(s)	Study population	Size of study sample	Time from disaster to data collection	Context for deployment			Design and methodology			Quality assessment*
							Ordinary workplace	Other than usual but in same country	International	Method	Data collection strategy	Analysis	
1	Geisz-Everson et al. 2012	To describe the shared experiences of CRNAs who were on duty in New Orleans during Hurricane Katrina	Storm	CRNA	10	2 years	X			Focus ethnographic	Focus groups	Ethnographic	+ + +
2	Hammad et al. 2017	To explore the lived experiences of emergency nurses across the world who have responded to a disaster in the emergency department	Natural or human-made disasters	Nurse	13	No information	X			Hermeneutic phenomeno-logical	Individual interviews on two occasions, via Skype or face to face	Thematic analysis	+ +
3	Johal & Mounsey 2015	To explore nurses' perspectives following the Canterbury, New Zealand, 2010–2011, earthquake sequence and the subsequent recovery process	EQ	Nurse	11	3 years	X			Qualitative	Semi- structured individual interviews	Grounded theory	+ + +
4	Johal et al. 2016	To explore how nurses are coping with the dual challenge of personal and professional impact following earthquake and into the recovery process	EQ	Nurses	11	3 years	X			Qualitative explorative	Semi- structured individual interviews	Grounded theory	+ + +
5	Kayama et al. 2014	To explore the experiences of municipal public health nurses in the wake of the March 2011 massive earthquake and tsunami and resulting nuclear accident in Fukushima, Japan	EQ, tsunami, nuclear incident	Public health nurses	22	2–2.5 years	X			Qualitative descriptive	Focus group interviews	Qualitative descriptive method	+ +
6	Li et al. 2015	To explore the earthquake disaster experiences of Chinese nurses and develop a substantive theory of earthquake disaster nursing that will help inform future development of disaster nursing education	EQ	Nurses and opera-ting room nurses	15	4–5 years		X		Qualitative exploratory grounded theory	Semi-structured interviews and field notes	Grounded theory	+ + +
7	Li et al. 2017	To investigate the disaster experiences of nurses called to assist survivors 1 month after the 2013 Ya'an earthquake	EQ	Nurses	16	6 years		X		Qualitative explorative	Semi-structured interviews and field notes	Qualitative content analysis	+ + +
8	Pour-vakhs-hoori et al. 2017	To explore the experiences and perceptions of disaster nurses regarding their provision of disaster health care services	Natural disasters (several kinds)	Nurses	15	No information	X			Qualitative explorative	Semi-structured interviews	Qualitative content analysis	+ +
9	Sato et al. 2015	To describe the experiences of a local governmental public health nurse who worked in an affected area after the Great East Japan Earthquake.	EQ	Public health nurses	1	2 years	X			Individual repeated interviews	Ethno-graphic	Ethnographic method	+ + +
10	Shipman et al. 2016	To describe the lived experience of RNs who have worked in a community disaster shelter or temporary medical clinic for the first time	Storms	Nurses	10	No information	X			Narrative inquiry method	Individual interviews	Phenomeno-logical analysis	+ +

Table 1 (continued)

No.	Author/s and year of publication	Focus	Type of disaster event(s)	Study population	Size of study sample	Time from disaster to data collection	Context for deployment			Design and methodology		Analysis	Quality assess-ment*
							Ordinary workplace	Other than usual but in same country	International	Method	Data collection strategy		
11	Sloand et al. 2013	To explore the experiences of volunteer nurses after the Haiti earthquake, January 2010.	EQ	Nurses	12	8–12 months			X	Descriptive qualitative	Semi-structured interviews	Corbin and Strauss	+ + +
12	Wenji et al. 2015	To 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 programmes	EQ	Nurses	12	1 year		X		Narrative method	Narrative individual interviews	Narrative inquiry	+ + +
13	Yang et al. 2010	To provide an understanding of how Chinese nurses experienced their practice during the on-site response to the Wenchuan earthquake	EQ	Nurses	10	3–4 months		X		Hermeneutic inspired method	Semi-structured interview and reports and field diaries	Thematic analysis	+ + +
14	Yan et al. 2015	To explore the skills, knowledge and attitudes required by RNs from across China who worked in the aftermath of three large earthquakes	EQ	Nurses	139	No information	X			Descriptive study using a question-naire	Question-naire of Nurses' Disaster Nursing Skills at Earth-quake Sites	Statistical analysis and content analysis	+ + +
15	Yin et al. 2011	To identify nursing skills most relevant for nurses participating in disaster response medical teams; to make recommendations to enhance training of nurses who will be first responders at a disaster site; to improve the capacity of nurses to prepare for and respond to severe natural disasters	EQ	Nurses	24	1 year	X			Survey with qualitative and quantitative alternatives	Survey	Statistical analysis	+ +

+ + Quality appraisal: sufficient quality.
+ + + Quality appraisal: good quality.
CRNA = certified registered nurse anesthetist; EQ = earthquake; n.a. = not applicable; RN = registered nurse.

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│  PubMed, CINAHL and PsychINFO searches│
│  In total: 1,735 articles             │
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│  Articles after duplicates removed    │
│  (n = 490)                            │
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│ Studies included in  │
│ the thematic synthesis│
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*The reasons for excluding studies at this stage was that they did not report scientific research or did not focus on nurses' perspectives.
**The reason for exclusion was that the articles did not focus on nurses, or because it was not possible to distinguish nurses in the results or the data were not related to a real disaster event.

Fig. 1.

and an independent, professional approach to serve the affected people as individuals and as a community. Being prepared to improvise in order to adapt to the context, including professional, personal and environmental demands, was crucial for the disaster nurse.

Three types of borders to be crossed were seen in disaster nursing: personal, professional and environmental borders (see Fig. 2).

Personal borders challenged the nurse's personal comfort zone by challenging her personal values and life view and affecting her emotionally. The nurse was faced with suffering and aspects of life that she had never before thought of or been faced with [13,14], which could cause fear [15,16] or disappointment [17] or a changed perception of the meaning of life [17–19]. When being deployed to a disaster, the nurse also had to balance an altruistic desire to serve the affected people and contribute to society with concerns for her own family, her own wellbeing and perceived moral obligations [16,20–22]. She

experienced feelings of being isolated and lonely [22]. At the same time, the nurse was proud of what she had done, and grew as a person from the disaster experience [23].

Professional borders challenged the role of the nurse, both in practical ways and in an overall way [17]. The practical aspects included performing duties outside the normal, or performing them in a different way than usual, most often by using more basic nursing methods than usual [19,21,22,24,25]. Prehospital or temporary settings demanded different skills and competences from normal [14]. Disaster nursing also included management and organization of the work. This involved command and control structures. It also included leadership and having to manage others, both professionals and volunteers [13,14,25]. This meant that the disaster nurse had to have specific skills and knowledge in disaster organization structure [23], but also leadership capacity, and a desire to serve as a model for others. A main responsibility and
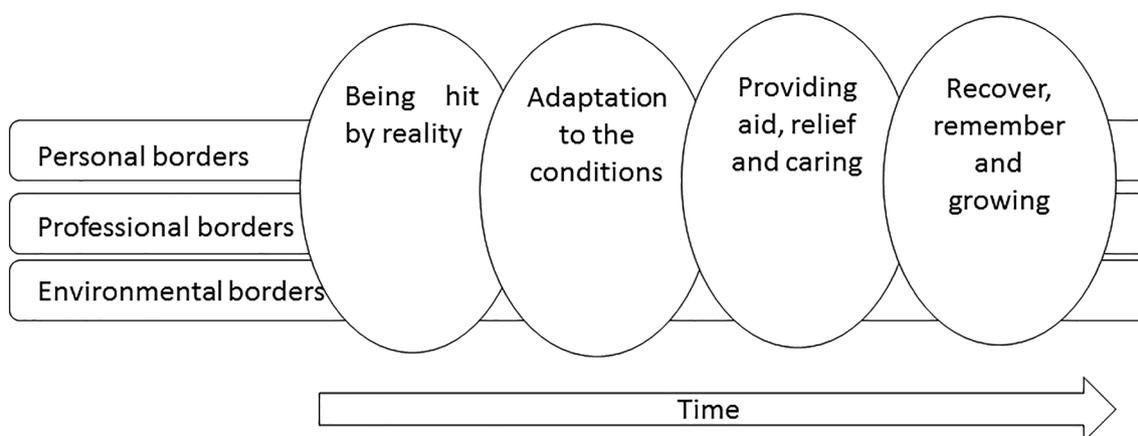
Fig. 2. Disaster nursing: crossing borders.

core activity of disaster nursing was to provide psychological aid and caring for affected people, both affected individuals and the community [13,15,26]. The need to feel capable of providing evidence-based psychological support and consolidate the suffering has been described as an essential part of disaster nursing [13,25].

Having to deal with *environmental borders* meant coping with experiences of being deployed outside your own workplace, either in a prehospital context, or in another hospital or geographic area, or in another country [14]. The disaster nurse had to cope with severe environmental conditions including climate [13], rubble [13], and poor living facilities including personal hygiene facilities [17,21] and, sometimes, the presence and management of cadavers [13]. Sometimes, the physical environment caused safety or security risks for the nurse [15]. Uncertainly about environmental risks led to rumors and feelings of uncertainty [18,22]. In order to be able to adapt and manage to cross these environmental borders, physical and mental robustness and self-care were seen as a fundamental basis for disaster nursing [13,14,26,27].

Integrating all these dimensions of borders into a process, being a disaster nurse could be described as a time-related process with four phases (see Fig. 2).

Being hit by reality. The first phase when being faced with the actual impressions of the disaster was a feeling of being unprepared [14] and surprised by the force and impact of the disaster event in terms of structural and functional damage [20] as well as human suffering [27]. Having to face the challenging environment and context of the disaster included moments of shock [19] and being overwhelmed, but also feelings of frustration at not being able to immediately improve the overall situation [25,27]. Some nurses stated that their beliefs about disasters and nursing in such situations had been wrong, and that they had been naïve in their preparations [15].

Adapting to the conditions. After being hit by reality, the process of adapting to the circumstances by being flexible involved adjusting one's nursing methods and strategies to solve problems [14]. The process demanded extensive professional nursing experience [26,27]. The use of basic and improvised nursing and medical care interventions [14,17], as well as specific strategies to organize the work, such as using triage methods [13], was essential in this phase. Lack of resources, equipment and time meant that all methods had to be basic, quick and robust [14,24,27]. Having to manage and lead others – both other professionals and volunteers, and at both a strategic and an operational level, in prehospital and hospital settings [13,21] – was another challenge disaster nurses had to face. In order to balance personal and professional needs and obligations, they used strategies to suppress their own emotions and reactions. Consciously focusing on their professional duties and staying objective were strategies that were frequently used and largely judged to be adequate and successful [13–15,19,27].

Table 2
Overview of theme representation in the literature review.

	Author and year	Borders			Disaster nursing response process			
		Personal	Professional	Environmental	Being hit by reality	Adapting to the conditions	Providing aid, relief, and caring	Recovering, remembering and growing
1	Geisz-Everson et al 2012	X			X			X
2	Hammad et al 2017	X	X		X	X	X	
3	Johal et al 2015	X		X		X	X	
4	Johal et al 2016	X	X			X		X
5	Kayama et al 2014	X	X	X			X	
6	Li et al 2015		X	X	X		X	X
7	Li et al 2017	X			X	X	X	
8	Pourvakhshoori et al 2017	X					X	X
9	Shipman et al 2016	X	X				X	X
10	Sato et al 2015	X	X		X	X	X	
11	Sloand et al 2013			X	X	X	X	X
12	Wenji et al 2015	X	X	X	X	X	X	
13	Yang et al 2010	X	X	X	X	X	X	X
14	Yan et al 2015		X	X	X		X	
15	Yin et al 2011		X			X	X	

Providing aid, relief and caring. The practicalities of disaster nursing included providing care for both individuals and the community [21]. Basic first aid, lifesaving and rescue interventions, trauma care, fracture and wound management [13,15,25], as well as public health interventions such as hygiene promotion, psycho-education and organization of supplies and human resources, were common responsibilities for the disaster nurse [27]. An essential part of the practicalities of disaster nursing was identifying and meeting psychosocial needs, including existential needs, among affected individuals and the community [13,15,17,22,23]. These needs were often not prioritized by other health professionals, meaning that the disaster nurse had a unique and important role to play [13,26]. The nurses tried to mediate a sense of trust and hope and of being cared for [18,21,22,26], which required specialist knowledge in evidence-based psychological support strategies [13].

Disaster nursing was built on a personal, altruistic desire to serve, to contribute, and to ease human suffering [16,19,21,27]. The disaster nurse also had an important role in protecting vulnerable populations, such as children and elderly people [24]. Another practical responsibility was to educate and train other responders [14] and the affected people themselves in order to expand available resources and create sustainability [24].

Recovering, remembering and growing. At some time, often after a longer period than initially expected [16], the disaster nurse had to pull out from the disaster mode or scene. The return to normal life, leaving the professional disaster nurse context, was described as an ambivalent, mixed-feelings process that included feelings of being strong, proud and successful and at the same time of having failed, having relinquished one's ideals, a general disappointment in life or lost belief in greater ideals [14,27]. Physical and psychological distress reactions and sometimes traumatic memories had to be faced and dealt with, step by step [14,15,17,20]. Both supportive coping strategies such as social support or self-caring [17], and less supportive strategies such as an increased use of alcohol were used during the recovery process [20]. Being deployed as a disaster nurse also included experiences of being involved or included in a specific context to which not everyone had access [17]. This made the nurses feel proud and pleased [17,20]. The actual time for recovery was highly individual and was often experienced as longer than expected [17,27]. Recovery took time and personal effort, and sometimes nurses sought professional support to recover and to grow both as a person and as a professional nurse [14,15,23].

3.3. Analytic findings; the HOPE model for disaster nursing

From the analytical analysis, a model for describing the content, context and essence of disaster nursing occurred (see Fig. 3). The acronym for the model, HOPE, was a direct result of a synthesis of the results. We found it valuable to stress the expressed core values and an overall goal for disaster nursing. Hope in this model does not necessarily imply a religious dimension but, rather, a trust, both in the nurse and in the disaster-affected individuals' ability to cope and manage even in the worst possible situations. Hope gives a direction forward and begins in the meeting between humans. Hope can be addressed or applied to any professional, personal or environmental aspect of disaster nursing and therefore also summarizes the essence of

The HOPE model for disaster nursing

Holistic health assessment and promotion

Organization and management of immediate response

Professional adaptation

Endurance and recovery

Fig. 3.

disaster nursing.

The HOPE model describes the core element in and essence of disaster nursing in the response phase. 'HOPE' stands for '**H**olistic health assessment and promotion; **O**rganization and management of immediate response; **P**rofessional adaptation; **E**ndurance and recovery'.

H: *holistic health assessment and promotion.* Disaster nursing involves assessing, evaluating and promoting health, both physical and psychosocial, for individuals and the community. This demands theoretical and practical skills in basic and advanced life-saving interventions and specific disaster nursing skills, such as triage. It also requires specialist knowledge of the psychosocial consequences of disasters. The provision of psychological support and care of affected people must rely on evidence-based methods. Also, protection of vulnerable individuals or groups is of concern for the disaster nurse. Given the limited resources that characterize a disaster event, the disaster nurse has to use triage methods and nursing interventions that can provide aid, relief and a sense of being taken care of to many affected persons at the same time.

O: *organization and management of immediate response.* Disaster nursing is about planning and organizing the response. This includes organizing staff, equipment and the logistics aspects of the response. The response must be designed to promote survival and wellbeing among as many persons as possible, by using the available resources in the most effective way. The disaster nurse needs to be prepared and have adequate skills and personal suitability to act as a manager for colleagues, other professionals and volunteers. Disaster nursing also involves collaborating and coordinating with other stakeholders and actors in building a robust and sustainable overall disaster response that can handle the unpredictability, uncertainly and dynamic process characterizing a disaster event.

P: *professional adaptation.* Disaster nursing is about adjusting normal procedures and methods to the disaster context and environment. The disaster nurse must make quick but wise assessments and decisions, and act fast to save lives and promote health. This demands specific knowledge, skills and personal strength. In order to promote survival and health among a large number of people in a disaster environment, specific methods, not necessarily the same as under normal conditions, need to be used. Improvisation and flexibility are therefore essential, and the role of the disaster nurse may be different than in the normal nursing context. The professional adaptation also includes balancing the nurse's personal needs, including family concerns, moral obligations, altruistic motives and the needs of the people affected.

E: *endurance and recovery.* Disaster nursing is about enduring, dealing with, and easing human suffering. Both for the affected persons and the community, and for herself, the disaster nurse should do whatever possible to contribute to recovery from the disaster. To enable a sustainable recovery process, the affected population should be involved, and self-efficacy should be encouraged. An important step in the recovery process is sharing knowledge and experiences with others. Also, the disaster nurse should be aware of her own reactions and take care of herself and her colleagues both during the response and after. The recovery process takes time, and requires concern and support from others, sometimes professionals but most often loved ones and colleagues. To endure, the disaster nurse should rely on the power of caring.

4. Discussion

This systematic literature review described the content, essence and experience of disaster nursing, and introduced the HOPE model to understand disaster nursing. Disaster nursing was found to affect both personal, professional and environmental borders, and was carried out as a four phases process from being hit by the reality, adapt to the conditions, providing aid, relief and caring and recovery from the experience. According to the HOPE model, disaster nursing is about conducting holistic health assessments and promotion, to organize and manage the response, professional adaption, endurance and recovery.

There are few models or theories describing disaster nursing [9]. In

contrast with existing models for disaster nursing in public health perspectives or risk reduction strategies [9], the HOPE model can be applied to all sudden-onset disasters and address guidance on content, essence and context of disaster nursing in the response phase. By using *meta*-findings from qualitative systematic reviews to develop models, the complexity and richness of the phenomena studied remains intact, in the same time as the phenomena can be described and understood [28]. The use of a model within a field that few nurses will ever experience in reality may be extra useful in order to provide both personal and professional preparations and gain an understanding of the challenges such as situation means.

Why is HOPE considered as a suitable acronym for a disaster nursing model? The first, and most important, reason was that, as the latent synthesis revealed, hope is a core value and goal of disaster nursing. The holistic health approach in disaster nursing needs to be specifically addressed. Nurses have training and knowledge to understand and respond to both physical and psychosocial consequences of a disaster, and their response is therefore much needed in disasters [1]. Secondly, the promotion of hope has been identified as one out of five evidence-based strategies for providing psychological support in the immediate phase after experiencing a traumatic event [29]. The provision of psychological support as an essential component in disaster nursing was emphasized in this review, and has also been addressed by others [30]. To instill hope as a psychological support intervention has strong evidence of efficacy, and can be facilitated at both an individual and a community level. Examples of individual approaches may be to instill thoughts that things will improve and normalize and to de-catastrophize. At a community level, media messaging and psycho-education may be used [28]. Thirdly, hope has been described as a central phenomenon in nursing [31], as discussed by several nursing theorists. Jean Watson describes instillation of hope as the second of ten 'carative' factors in nursing, mediated by a helping, trusting relationship between the nurse and the patient [32,33]. Kristen Swanson states that a hope-filled attitude, helping someone to find meaning and standing by them no matter what the situation, is an essential part of caring [34]. Patricia Benner and Judith Wrubel argue that mobilizing hope is part of the practice of caring, and that it is therefore central in nursing [35]. Hope is a complex and fundamental human phenomenon associated with meaning in life, and future goals, and includes both emotions and thoughts, and interpersonal relations [36]. In the HOPE model, hope can therefore be considered as a goal, a method, and a basis for disaster nursing from the perspective of both the affected persons and the disaster nurse. A limitation of the HOPE model is that it only applies to the response phase of a sudden-onset disaster. Disaster nursing in the preparation, prevention or recovery phase and disaster nursing in slowly developing crises are still areas to be further explored. Each and every disaster event is unique. In this literature review, experiences from several different types of sudden-onset disasters are synthesized. Therefore, despite the specific personal, professional and environmental challenges that characterize every disaster situation, the authors consider the results as generalizable to many types of sudden-onset disasters.

Further research studies on disaster nursing, and development and evaluation of specialist methods for disaster nursing are needed to build evidence on how to best prepare and support affected people and responding nurses in disasters. Examples of such studies includes methods for how psychosocial support can be provided to a large number of affected people also in situations with severely affected infrastructure and limited resources, practical methods for holistic health assessments, studies on the the disaster nurse as manager, and more knowledge on how to minimize unwell being for nurses deployed to disasters.

5. Limitations

Synthesis of qualitative literature reviews does not necessarily require the localization of every available study. Instead, a 'conceptual saturation' may be more appropriate [10]. The authors' impression was

that both conceptual saturation and a rich description of the phenomena were reached in the analysis. Only original research articles were included, even if the thematic synthesis methodology allows the use of 'grey literature' as data source. However, as in any systematic review, it cannot be excluded that other studies or other perspectives may have influenced the results. In this thematic review, the results from two studies using qualitative surveys for data collection were included in the analysis process. To include these results in the thematic analysis was experienced to add value, especially on the actual content of disaster nursing, and the findings validated the interview based data from the other studies [37].

In a qualitative synthesis, the goal is not only to summarize the results from different studies, but to present an integrated, comprehensive result that moves beyond the content of the original studies [10,37]. In this steps of the analysis process, the judgement and insights of the authors is critical [10]. The two authors of the present study have different personal and academic experiences and perspectives of disaster nursing. One of the authors (KH) has several years of clinical disaster nursing experiences from over twenty disaster areas around the world. The authors contributed both separately and together in different phases of the analysis. This increased the possibility to integrate and interpret the data, and obtain a synthesized result that went beyond the original results [10].

6. Conclusion

The HOPE model describes the core element in and the essence of disaster nursing in the response phase of a sudden-onset disaster. 'HOPE' stands for **H**olistic health assessment and promotion; **O**rganization and management of immediate response; **P**rofessional adaptation; **E**ndurance and recovery. The model can be applied to all sudden-onset disasters and provide guidance on the content, essence and context of disaster nursing. This review and the model can contribute by preparing nurses for deployment in disasters, contribute to disaster nursing education, and serve as a basis for further research and evidence development.

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