

Exploring advanced nursing practice during Australian disasters: A scoping review

Author

Hutton, Alison, Conlon, Lisa, Kako, Mayumi, Wilson, Rhonda L, Hammad, Karen, Olson, Sarah, Stewart, David, Ranse, Jamie

Published

2023

Journal Title

Health Emergency and Disaster Nursing

Version

Version of Record (VoR)

DOI

[10.24298/hedn.2022-0002](https://doi.org/10.24298/hedn.2022-0002)

Rights statement

© 2023 The Authors. Health Emergency and Disaster Nursing published by NPO Disaster Nursing Group. This article is licensed under a Creative Commons Attribution 4.0 International license.

Downloaded from

<http://hdl.handle.net/10072/426528>

Griffith Research Online

<https://research-repository.griffith.edu.au>

REVIEW ARTICLE

Exploring advanced nursing practice during Australian disasters: A scoping review

Alison HUTTON^{1,2,3}, Lisa CONLON⁴, Mayumi KAKO⁵, Rhonda L. WILSON^{1,8}, Karen HAMMAD², Sarah OLSON¹, David STEWART⁶ and Jamie RANSE⁷

¹School of Nursing and Midwifery, University of Newcastle, Callaghan, New South Wales, Australia

²School of Nursing and Midwifery, Flinders University, Bedford Park, South Australia, Australia

³School of Nursing, Johns Hopkins, Baltimore, Maryland, USA

⁴School of Nursing, The University of Adelaide, Adelaide, South Australia, Australia

⁵School of Biomedical and Health Science, Hiroshima University, Kasumi, Hiroshima, Hiroshima, Japan

⁶International Council of Nurses, Geneva, Switzerland

⁷Menzies Health Institute Queensland, Griffith University, Gold Coast, Queensland, Australia

⁸School of Nursing, Massey University, Palmerston North, New Zealand

Abstract

Background and Aim: Disasters occur daily around the world. As the largest body of health professionals, nurses are looked upon during a disaster for leadership, clinical assistance, and support. Nurses are at the forefront of managing disasters in their communities, yet their complex role as advanced nurse practitioners, clinicians, managers, and leaders is not always fully understood. The aim of this paper is to explore what advanced nursing practice (ANP) takes place during a disaster.

Methods: This scoping review was guided by the framework proposed by Arksey and O'Malley. The review searched five relevant databases. A scoping review design was chosen as the authors expected that evidence in the field would be produced using a wide variety of methodologies.

Results: Nurses work long hours during a disaster, with hospitals and nurses becoming the centre of events and the 'go to' place during a disaster. During disasters, nurses often have little sleep and frequently put others' needs before their own. The nurses in these studies worked while they were worried for themselves and their families. Nurses reported feeling capable and reported that all their experience and skills came to the fore during these challenging situations.

Conclusions: During disasters, nurses were flexible and adaptable, with many taking on different roles. Nurses are quick to find solutions; problem solving is key and responding to disasters is 'just what you do'. Nurses demonstrated fundamental expertise and they had the agility to pivot when the occasion demands. It is evident that nurses work beyond conventional limits during a disaster.

Key words: advanced nursing practice, disasters, nursing, nursing practice

INTRODUCTION

Disasters occur daily around the world. The United Nations Office for Disaster Risk Reduction (UNDRR) reported that in 2015, 998 million people were affected by disasters, with over 22,773 people losing their lives (UNDRR, 2020). Over the past few years, Australia has had its fair share of disasters, with bushfires, floods, and the coronavirus disease 2019 (COVID-19) pandemic.

Correspondence: Alison Hutton, School of Nursing and Midwifery, University of Newcastle, University Drive, Callaghan, NSW 2308, Australia. Email: alison.hutton@newcastle.edu.au

Received 6 September 2022; accepted 29 December 2022



This article is licensed under a Creative Commons Attribution 4.0 International license.

As the largest body of health professionals, nurses are looked upon during a disaster for leadership, clinical assistance and support (Filmer & Ranse, 2013; Ranse, Hutton, Wilson, & Usher, 2015; Veenema, et al., 2016). Nurses are at the forefront of managing disasters in their communities, yet nurses' complex roles as advanced practice clinicians, managers and leaders, are not always fully understood or appreciated by other healthcare professionals and/or their communities (Al-Maaitah et al., 2019).

It is anticipated that the impact of climate change and extreme climatic events will have ongoing consequences for Australia, with increased mortality due to heatwaves, bushfires, and floods (Barlow, 2008). Globally, significant health impacts have been seen in Paris in 2003, with over 14,000 people dying in a heatwave, and a further 30,000 dying across Eastern Europe (World Health Organization, 2022). Australia is a large geographical space, prone to natural disasters. The Australian environment is variable, and it is common for large parts of the country to go from hot-dry conditions to heavy rainfall resulting in either floods or heatwaves (Royal Commission, 2020). Over the last few years, Australia has seen individuals, livestock and wildlife perish in bushfires and floods. This was closely followed by the SARS-CoV-2 virus (COVID-19) pandemic, which to date has seen 1,208 deaths in Australia (Australian Government, 2021).

Advanced nursing practice (ANP) is concerned with the improvement and knowledge of the nurse beyond conventional limits (Nursing and Midwifery, Board of Australia, 2020). A disaster is one of those times that a nurse will be called upon to contribute at different levels of practice. However, little is known about how ANP is measured or captured in the context of disasters.

The Institute for Health and Medicine (2010) report, "Future of Nursing: Leading Change, Advancing Health", recommends the removal of scope-of-practice barriers during disaster events to facilitate the expanding of opportunities for nurses to lead and diffuse collaborative improvement efforts, and preparing and enabling nurses to lead change to advance health. '*Advanced nursing practice* refers to the level of nursing practice obtained in their work environment and is not to be confused with the term, *advance practice nursing*, which refers to the individual nurse demonstrating practice at an advanced level' (Lowe, Plummer, O'Brien, & Boyd, 2012). Therefore, the aim of this paper is to explore how nurses expand or extend their practice during a disaster.

METHODS

Design

This scoping review was guided by the framework proposed by Arskey and O'Malley (2005). A scoping review is a form of knowledge synthesis that addresses an explanatory research question aimed at mapping key concepts, types of evidence and gaps in research related to a defined area, and to synthesise existing knowledge (Colquhoun, 2016). A scoping review was chosen because the authors expected that evidence in the field would be produced using a wide variety of methodologies, and thus would be better synthesised by a scoping review rather than a systematic review (Khalil et al., 2016). In this way, it is intended that the scoping review will map existing research, identify gaps in the literature and make necessary recommendations for future research (Khalil et al., 2016). The review followed the five key stages of the framework proposed by Arskey and O'Malley (2005), which are:

1. Identifying the research question;
2. Identifying relevant studies;
3. Study selection;
4. Charting the data; and
5. Collating, summarising, and reporting the results.

There is an optional sixth step of consultation with stakeholders; however, this was not undertaken as it was not considered relevant to this review.

Identifying the research question

The research question arose from the need to understand not only the role of Australian nurses during a disaster; but also the *potential* for nurses to work in advanced practice roles during times of disaster. As the impact of global disasters is escalating, the need to understand the role of nurses is becoming increasingly important (Rokkas, Cornell, & Steenkamp, 2014). In the Australian context, the scope of practice of Registered Nurses (RNs) is an important question to understand. In Australia, hazards resulting in disasters include: floods, bushfires and cyclones, with all requiring a broad depth of practice. Therefore, it is important to include studies that contribute to the understanding of what nurses do, and/or have the potential to do.

Identifying relevant studies

A comprehensive search of five relevant databases, (Embase (n = 676), CINAHL (n = 2,300), PubMed (n = 1,898), Scopus (n = 568), Ovid Medline (n = 3,703) and Web of Science (n = 649)), was conducted, resulting in 9,749 papers to screen using a Preferred

Table 1 Inclusion/Exclusion criteria

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> ● Registered Nurses ● Nurse Practitioners ● Advance Practice Nurses ● Studies conducted in Australia ● Published in the last 15 years ● English language ● Refereed Journal articles ● Personal reflections 	<ul style="list-style-type: none"> ● Studies outside of Australia ● Not related to emergency nurse practitioners or Advance Practice Nurses ● Systematic and Cochrane reviews ● Studies not published or translated in English

Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR) approach (Tricco et al., 2018). Search terms are included in Table 1.

Charting the data

All identified papers were exported into Covidence™ (Crunchbase, Melbourne) with duplicates removed. Two independent reviewers examined the list of titles and abstracts to identify citations that met the inclusion criteria. Any disagreements throughout this process were resolved through the use of a third reviewer. Full-texts of papers were then retrieved. The results of the search and extraction are presented in a PRISMA-ScR flow diagram (Figure 1). Thematic analysis was used to analyse the manuscripts. The analysis process involved five phases: (1) familiarising oneself with the data; (2) generating initial codes as a means of indexing and categorising to establish a framework of thematic ideas; (3) searching for themes as they arise from term codes and categories; (4) reviewing themes for accuracy and consistency; and (5) defining and naming final themes. This then allowed patterns to appear, sub-themes to be grouped and, finally, key themes to emerge (Braun & Clarke, 2006).

Collating, summarising, and reporting the results

A total of 20 manuscripts were analysed; a detailed summary of each article is presented in Table 3. There were two key categories of documents: (1) refereed journal articles ($n = 4$); and (2) first-hand or narrative accounts of nurses' experiences ($n = 16$). It is also important to note that five manuscripts could not be found during this search. Many of these were in State nursing journals and difficult to access without a subscription.

Ethics

The University of Newcastle, Higher Degree Research Ethics Committee approved this study.

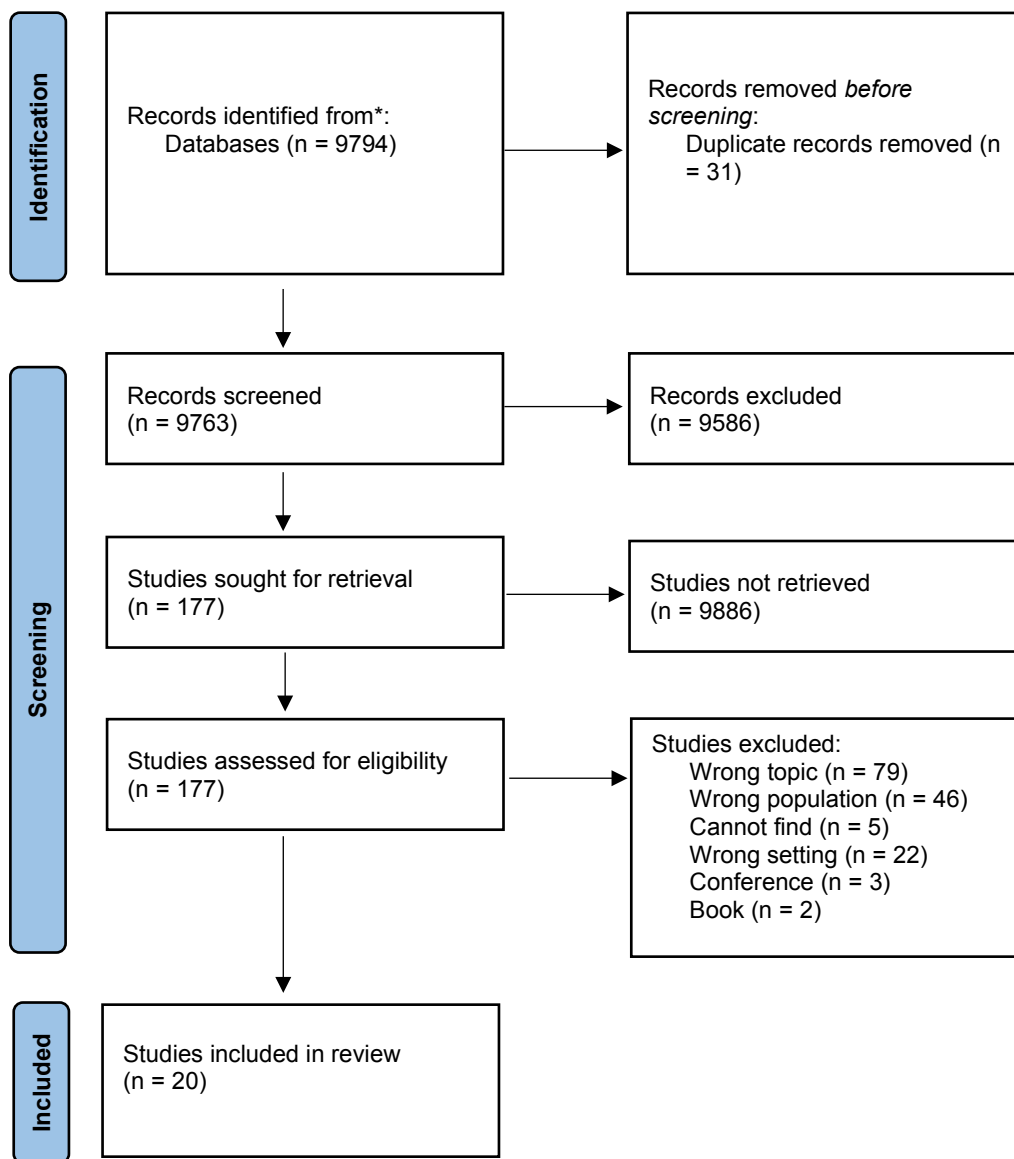
RESULTS

Several disaster events are represented in this review (Table 2); however, most articles reported on either the Black Saturday bushfires (2009) or Cyclone Yasi (2011). Using thematic analysis, four themes emerged from the review: (1) time to prepare; (2) during a disaster; (3) nurses go above and beyond; and (4) nurses felt capable to respond during a disaster. Table 3 presents an overview of manuscripts included in this study.

Time to prepare

A bombing occurred on October 12, 2002, on the Indonesian island of Bali, killing more than 200 people and injuring many more. Nurses at the Royal Darwin Hospital were able to prepare to receive casualties from neighbouring Bali. Nurses were able to discharge patients to neighbouring hospitals and redesign the Emergency Department space to receive casualties. Nurses worked in teams to transform the emergency space from 17 beds to a 40-bed unit by using the nearby outpatient department. They set up a triage station, reception desk, resuscitation room, an area for the treatment of significant injuries, and another area for the treatment of minor injuries (Taylor, O'Connor, St Leone, & Stoner Halpern, 2003). Further preparation included the hanging of intravenous (IV) lines and drawing up of pain relief such as morphine, midazolam and ketamine (Taylor et al., 2003). As well as setting up the physical space, attention was also given to the emotional wellbeing of staff; this included staff briefings and providing food and water for staff prior to receiving patients (Lancaster & Taylor, 2003; Taylor et al., 2003).

Cyclone Yasi hit the coast of Queensland, Australia at 285 km/h on February 3, 2011. With an established cyclone plan in place, nurses at the Cairns hospital had time to prepare. However, preparation did not involve setting up a hospital, it involved evacuating the 350 inpatients to Brisbane (Hayes, 2011; Anonymous,



*Data bases used Embase, CINAHL, PubMed, Scopus, Ovid Medline, and Web of Science

Figure 1 PRISMA flow diagram.

2011b). Patients that could be temporarily discharged were sent home, whereas others were prepared for transfer via air to Brisbane (Anonymous, 2011a; Anonymous, 2011b; Hayes, 2011). Nurses worked in teams, some to transport patients to the airport, and others to stay with patients until they were flown out. The acuity of patients included ventilated patients from the intensive care unit (ICU), and the neonatal intensive care unit (NICU), to patients needing dialysis. As well as evacuating the

hospital, nurses set up a field hospital in a designated ‘safe space’ to accept emergency patients during the cyclone (Anonymous, 2011a; Anonymous, 2011b; Hayes, 2011). Similarly, activities such as evacuating as many patients as possible, spending the day preparing patients, helping patients contact relatives, and managing finer details such as medications, documentation, and appropriate equipment, were also undertaken by nurses in the response to Cyclone Yasi and the 2010–11 Brisbane

Table 2 Disaster events

Disaster event	Year	State	Reference
Retrieval of Bali Bombing Victims	2002	Northern Territory	Taylor et al. (2003); Lancaster and Taylor (2003); Harulow (2002)
NSW Bushfires	2002	NSW	Morris (2002)
Waterfall Railway disaster	2003	NSW	Buckis (2003)
Coraki Floods	2007	NSW	Barlow (2008)
Black Saturday Bushfires	2009	Victoria	Williams (2009); Martin (2009); Quirk (2009); Ranse, Lenson and Aimers (2010); Ranse and Lenson (2012)
Cyclone Yasi	2011	Queensland	Anonymous (2011a) Hayes (2011); Anonymous (2011b)
Queensland Floods	2011	Queensland	Moynahan (2011)
Rockhampton Floods	2011	Queensland	Jamieson (2011)
Ipswich Floods	2011	Queensland	Queensland Nurse (2011)
Canberra Xmas/New Year Bush fires	2019	Australian Capital Territory	Fedele (2020)
East coast bushfires	2019–20	NSW, Victoria	Hayward (2020)

Table 3 Summary of reviewed literature

Reference	Aim/Objective	Sample and Setting	Methods and Methodology	Limitations and Rigour/Validity	Major findings
Taylor (2003) The voice of experience: Australian nurses caring for victims of Bali bombing	Provides an account of the Bali bombing response	Follows the journey of three Australian nurses at the Royal Darwin Hospital who were part of the response team during the Bali bombings	Narrative	Narrative – no ethics	Real sense of community Had to rejig the disaster plan Set up and reimagine the space before patients arrive Prioritisation of care – airways and fluids Supporting each other
Lancaster and Taylor (2003) Waiting to Exhale ... the Bali bombing: a nursing perspective from the staff of Royal Darwin Hospital	To provide a nursing perspective of caring for victims of the Bali bombing	Personal experience of receiving burn victims as a result of the Bali bombing	Narrative	Narrative – no ethics	Real sense of community Had time to set up Supporting each other ‘Normal work’ continued Moved out as many patients as possible Once patients stabilised, they were flown out to other specialised burns units across Australia Looking after each other Supporting patients going through trauma
Williams (2009) Bushfire disaster: a rural nurse’s perception	Offers a personal rural perspective of the Black Saturday Bushfires	Nursing services in Kinglake, Steele’s Creek, Chum Creek, Yarra Glen, Warburton, Powelltown, and the rest of the O’Shannassy Shire	Personal reflection	Personal reflection – no ethics	The need to share stories and learn from each other Learning from each other to enhance and prepare future practices in disaster events Worked while own houses were in danger Had to wait for roads to be cleared to treat/reach patients

Continued on next page.

Continued.

Reference	Aim/Objective	Sample and Setting	Methods and Methodology	Limitations and Rigour/Validity	Major findings
Martin (2009) Black Saturday and the Victorian bushfires: implications for advanced nursing practice roles	To identify and discuss the potential implications for advance practice nursing roles	N/A	Editorial/Reflection piece	Editorial/Narrative – no ethics	Lessons learned will be used to enhance the State Health Disaster Plan (DISPLAN). Highlighted the importance of emergency nurses promoting the DISPLAN and include the role of the emergency nurse practitioner. Calls for clarity in regards to Emergency Nurse Practitioner roles
Harulow (2002) Incredible nurses rise to Bali challenge	Reporting of the nurses' experience of Bali bombings at the Royal Darwin Hospital	Nurses at the Royal Darwin Hospital	Interview of Ronnie Taylor	Interview – no ethics	Involvement of staff from Darwin Private Hospital following the Bali bombings in 2002. Highlights the need to work as a team during disaster events
Barlow (2008) Nurses feel impact of climate change	Provide details of the experiences following the Coraki floods	Coraki's Campbell Hospital	Report	N/A – no ethics	Identifies the significant impact on nurses providing care to communities experiencing climate change
Jamieson (2011) Rockhampton	Provide details of the experiences following the Rockhampton floods	Gracemere	Personal reflection/First person account	N/A – no ethics	Highlights the need to develop a culture of 'can do'. The need to develop partnerships
Anonymous (2011a) Nurses and midwives create history during Cyclone Yasi	Provides details of an evacuation report from Cairns Base Hospital following Cyclone Yasi	N/A	Case report	Descriptive – no ethics	Highlights the importance of nurses during disaster events. Identifies the need to learn from both positive and negative aspects and adapt practices for future events.
Ranse and Lenson (2012) Beyond a clinical role: nurses were psychosocial supporters, coordinators and problem solvers in the Black Saturday and Victorian bushfires in 2009	To explore the role of nurses who participated in Black Saturday and Victorian bushfires	11 volunteer nurses from St John Ambulance	Qualitative research Semi-structured interviews	Not generalisable to the general community Reported on one event Nurses from different organisations might have a different experience	Being prepared and having an expansive role Participants believed they were educationally prepared and had adequate clinical experience

Continued on next page.

Continued.

Reference	Aim/Objective	Sample and Setting	Methods and Methodology	Limitations and Rigour/Validity	Major findings
Ranse et al. (2010) Black Saturday and the Victorian bushfires of February 2009: a descriptive survey of nurses who assisted in the pre-hospital setting	To understand the nursing experience pre-during and post the event (2009 Victorian bushfire)	53 nurses – all members from St John Ambulance	Descriptive survey	Limited to a single event and group of nurses (St John)	Level of preparedness Most nurses had taken on disaster education – although need bushfire-specific education. More research is needed on the roles nurses undertake during a disaster
Anonymous (2012) Nurse initiated discharge	Reporting findings from the NSW and QLD Union post-disaster response	N/A	Personal reflection/First person account	First person account – no ethics	Nurses are able to contribute to planning and implementation of disaster preparation
Morris (2002) Australian nurses help tackle bushfires	Nurses describe working with firefighters	N/A	Descriptive report	Descriptive report – no ethics	Nurses working alongside fire fighters
Quirk (2009) Bushfires take a toll on nurses	Nurses rally around colleagues impacted by bushfires	Descriptive	N/A	Descriptive – no ethics	That caring for the physical nature of injuries is easier than dealing with the emotional toll
Hayes (2011) Renal dialysis service and patient evacuation during the Queensland Cyclone Yasi disaster	One nurse's story of evacuating patients during Cyclone Yasi	Descriptive	N/A	Descriptive – no ethics	Personal experience of being stranded inside the hospital and providing care to patients over 4 days
Fedele (2020) In the line of fire	Nurses in the front line of relief efforts (Canberra)	Descriptive	Narrative – reflective piece	Personal account – no ethics	Needs to be better communication Support to evacuate vulnerable people Nurses evacuating their houses while treating patients or living in temporary accommodation like caravans
Monaghan (2011) Queensland floods: a dialysis nurse's experience	Describes a nurse's 4-day vigil working in a dialysis unit	Descriptive	Personal account	Personal account – no ethics	Work while house is at risk, trapped in the hospital for 4 days
Buckis (2003) Runaway train – Waterfall crash	Described a train derailling in Waterfall, NSW	Sutherland Shire, NSW	Report of incident	Report of incident – no ethics	Nurses had time to prepare, cared for patients with compound fractures and head injuries
Anonymous (2011b) State and Territory News: nurses and midwives praised	Describing the work of nurses during the floods – and how they contribute to the community	Queensland floods	Report	Report of incident – no ethics	Nurses work while their homes and communities are impacted

Continued on next page.

Continued.

Reference	Aim/Objective	Sample and Setting	Methods and Methodology	Limitations and Rigour/Validity	Major findings
Hayward (2020) Mental health nursing in bushfire-affected communities: an ethnographic insight	Provides an insight on guiding communities through grief and loss post bushfire	School setting and wider school community	Auto-ethnography using Hodges Health Career Model	Ethics not obtained due to auto-ethnography	Mental Health Nurses can take the lead in providing psychological first aid (PFA) Nurses should be prepared to respond to deep levels of distress Need to be flexible when sessions are held and offer refreshments
Ranse et al. (2021) Phenomenology of Australian civilian hospital nurses' lived experience of the out of hospital environment following a disaster	Uses phenomenology to uncover moments of being an Australian civilian hospital nurse	8 hospital nurses	Phenomenology Interviewed	Ethics obtained Not clear if results are generalisable	5 moments: On the way to the event Prior to starting work Working on a shift during a disaster End of shift Returning home
Anonymous (2011c)	The floods we won't forget	Descriptive	N/A	Descriptive – no ethics	Personal experience of working in the Ipswich floods

floods (Anonymous, 2011a; Anonymous, 2011b; Hayes, 2011; Moynahan, 2011). Nurses who stayed with dialysis patients during the Brisbane floods remained trapped for 4 days until help arrived (Moynahan, 2011).

The Waterfall Railway derailment occurred in 2003, with 41 people requiring hospitalisation. Due to difficulties accessing the site, hospitals in the local Sydney region were required to set up specific areas to receive patients, check stock, and coordinate teams to be on stand-by. Injuries included: head wounds, contusions, and compound fractures. However, the most challenging aspects reported by nurses, was managing the distress of patients (Buckis, 2003).

During a disaster

When patients did arrive at the Royal Darwin Hospital as a result of the 2002 Bali bombing, 14 patients were triaged and were attended to in the first 20 min. Two hours later, those patients were either transferred to the ICU or operating theatres (Taylor et al., 2003). Many patients had extensive burns, blunt and penetrating injuries, airway difficulties, and were unconscious and unrecognisable (Taylor et al., 2003). Due to the difficulty in identifying patients and/or lack of documentation, a labelling system was implemented for triage (Taylor et al., 2003; Harulow, 2002). During this time, minimal information was available to nurses, so priority care such as airway management, pain relief, tetanus prophylaxis, wound care and temperature regulation was the focus.

Care was provided by multidisciplinary teams in cramped spaces, with as many as five people working on one patient at a time (Taylor et al., 2003).

During the 2002 Bali bombing response, consideration was also given to where to direct 'normal' day-to-day traffic, and how 'business as usual' cases would be cared for as two multiple trauma patients arrived (Lancaster & Taylor, 2003). However, not all health facilities were able to work on a 'business as usual' basis. For example, during the 2009 Black Saturday bushfires, community 'district' nurses had to shut down specialist clinics to support other nurses working during the disaster period. Nursing care was undertaken in pairs from cars, and people were treated for shock or burns (Williams, 2009). Quirk (2009) reported that most people had burns on their hands, feet, and arms. Patients that were difficult to reach were comforted and supported by nurses via phone (Williams, 2009). Other nurses treated patients for minor wounds and injuries ('a lot of eye rinses, and minor burns' Ranse & Lenson, 2012, p. 160) or smoke-related injuries such as inhalation or secondary injuries, as a result of trying to escape the fire (Quirk, 2009). Additionally, during Canberra's 2003 bushfires, nurses assisted in the evacuation of vulnerable people, such as those with Alzheimer's and dementia. When admissions did arrive, it was mainly minor wounds and burns (Fedele, 2020; Quirk, 2009; Ranse & Lenson, 2012). And during the 2019–20 South Eastern Australian bushfires, Hayward (2020), in an auto-ethnographical account,

describes providing psychosocial first aid to children and their families in schools. This was the only mention of a mental health program in the literature, other than nurses providing broad aspects of psychosocial support (Ranse & Lenson, 2012).

Hospitals and nurses became the ‘centre’ of events and the ‘go to’ place for residents escaping from the Coraki floods in northern New South Wales (NSW), Australia. Residents turned to nurses within the hospital for advice, information, and support during this time. In addition, as some services could not be reached due to flooding, the local hospital took over these services until the flooding subsided. One example was providing methadone to local residents. Nurses treated patients for lesions or infections, and septic shock. Similarly, nurses in Rockhampton and Ipswich set up primary healthcare clinics during disasters to treat patients when hospitals were inaccessible (Jamieson, 2011; Queensland Nurse, 2011).

In 2002 and 2003, NSW experienced an equally harsh fire season due to excessive drought. Morris (2002) reported that emergency departments were inundated with patients suffering from respiratory conditions such as asthma and smoke inhalation. People were also treated for burns, cuts and bruises (Morris, 2002).

Floods that surrounded the towns of Emerald, Bundaberg, Maryborough, Gympie, and Ipswich in Queensland (QLD) caused residents to be cut off from the Emerald hospital as flood waters rose. During this event, patients and staff had to be evacuated via helicopter and four-wheel drive vehicles (Queensland Nurse, 2011).

Finally, a study by Ranse, Arbon, Cusack, and Shaban (2021) reported that nurses care for patients with a wide range of needs during a disaster, including gastroenteritis, respiratory, mental and health-related illness, tropical diseases, and unspecified injuries.

Nurses go above and beyond

When a patient was acutely ill, one nurse drove the patient via back roads and in their own car to a larger facility (Barlow, 2008). During the Ipswich floods, nurses reported other nurses battling flood waters to assist their colleagues, and then getting trapped for days (Moynahan, 2011; Queensland Nurse, 2011). During the response to the 2002 Bali bombing, nurses went home to sleep for a few hours, but returned to the hospital to support colleagues and provide patient care (Taylor et al., 2003). Nurses came in from annual leave and worked overtime (Morris, 2002; Taylor et al., 2003; Lancaster & Taylor, 2003; Jamieson, 2011; Anonymous, 2011a; Anonymous, 2011b; Queensland Nurse, 2011). More-

over, during the recovery period, nurses assisted with the community clean-up of flood-affected properties (Jamieson, 2011). Additionally, nurses reported going from their shifts at the hospital to help the local country fire service (CFS) to fight fires (Morris, 2002). Supporting others was extended to health colleagues, such as St John Ambulance Australia volunteers, with nurses offering equipment and consumables to assist with their work (Ranse & Lenson, 2012).

It was also reported that nurses worked while they were worried for themselves, their family, pets, and friends (Barlow, 2008; Williams, 2009; Jamieson, 2011; Moynahan, 2011). During the 2009 Black Saturday bushfires, nurses worked in conditions of low visibility, ash, and haze, even though many of them had lost their homes and were looking after distraught loved ones (Williams, 2009). Similarly, nurses working during floods or during a cyclone did not know if their own houses were safe and some continued to work knowing that their houses had been destroyed (Barlow, 2008; Jamieson, 2011; Anonymous, 2011b; Moynahan, 2011).

All reviewed articles document nurses providing psychosocial care pre, during and post disaster (Harulow, 2002; Taylor et al., 2003; Lancaster & Taylor, 2003; Barlow, 2008; Jamieson, 2011, Anonymous, 2011a; Hayes, 2011; Ranse & Lenson, 2012, Moynahan, 2011; Anonymous, 2011b; Ranse et al., 2021). Nurses reported that their nursing experience helped them to provide emotional support to people affected by disasters and felt they were able to provide support and comfort (Hayes, 2011; Ranse & Lenson, 2012). However, Buckis (2003) reported that dealing with the psychosocial issues of traumatised patients took up a lot of time, and nursing staff were not prepared for this.

Nurses were capable

Following the 2002 Bali bombing, nurses shared that they felt that all their experience and training came to the fore (Taylor et al., 2003; Ranse & Lenson, 2012). Nurses reported using their clinical skills, hands-on assessment skills, such as feeling for a pulse without the need for monitors or equipment (Ranse et al., 2021). They felt that they used all the knowledge/skills they have learnt, and these experience(s) led to an increase in their confidence (Lancaster & Taylor, 2003; Ranse et al., 2021). Nurse participants in a study by Ranse and Lenson (2012) stated that their nursing skills were adaptable to a range of settings, such as bushfires and floods. During Cyclone Yasi, nurses reported using all resources at hand to ‘innovatively focus’ on what was required of them, with one nurse reporting “*nurses are so flexible, they keep*

moving like willow” (Anonymous, 2011a, p. 17). They were also seen as problem solvers, and navigators of the healthcare system (Ranse & Lenson, 2012). Narrative accounts detail a camaraderie between colleagues and an overall wider network of support from nurses they do not know (Taylor *et al.*, 2003; Barlow, 2008; Jamieson, 2011; Hayes, 2011).

DISCUSSION

Trends in disaster nursing

With the current COVID-19 crisis, nurses are working additional shifts in challenging environments, and are unable to take leave (Australian College Nursing, 2021). Even though this might be the norm during disasters, psychosocial care for themselves, each other and their wider community was apparent (Harulow, 2002; Taylor *et al.*, 2003; Lancaster & Taylor, 2003; Barlow, 2008; Jamieson, 2011; Anonymous, 2011a; Hayes, 2011; Ranse & Lenson, 2012; Moynahan, 2011; Anonymous, 2011b; Ranse *et al.*, 2021). Nurses continued to work while tired and exhausted (Harulow, 2002; Taylor *et al.*, 2003; Lancaster & Taylor, 2003; Barlow, 2008; Jamieson, 2011; Anonymous, 2011a; Hayes, 2011; Moynahan, 2011; Anonymous, 2011b). During the highs and lows of a disaster response, nurses reported feeling capable. In addition, they claimed that their training came to the fore, and that they felt comfortable using their basic clinical skills. Hammad, Arbon, Gebbie and Hutton *et al.* (2017) found that nurses are able to transfer their day-to-day skills and put them into practice in a disaster setting.

Nurses were felt capable, supported and believed what they do is everyday practice; the difference being longer hours and higher acuity in an intense amount of time during a disaster. Innovation is part of what nurses do every day, and therefore, this work can often go unrecognised. Problem solving is key, and narrative accounts showed that nurses worked with what they had in front of them, were agile, resourceful, and worked in teams or as individuals (Taylor *et al.*, 2003; Lancaster & Taylor, 2003; Barlow, 2008; Anonymous, 2011a; Hayes, 2011; Moynahan, 2011; Anonymous, 2011b).

What does advanced nursing practice look like in a disaster?

From the reviewed literature, it is apparent that there is little discussion on advanced practice nursing experiences during a disaster. Nurses are capable of procedures such as nurse-initiated discharge, but then they go back to their normal day-to-day practices following a disaster, instead of retaining that new skill or incorporating this into their

daily practice (Anonymous, 2012). Nurses were innovative to respond to immediate needs, demonstrating fundamental expertise with the agility to pivot or activate an entrepreneurial skill when the occasion demands.

The Queensland Nursing Union (QNU) (2012) states that nurses are in a unique position to contribute to disasters. In addition, they claim that there must be improved response and recovery strategies that include nurses; stating, “*we have witnessed their critical role in providing care and health services during difficult times when their own personal circumstances placed them under future stress*” (p. 17). In addition, they argue that nurses are capable of procedures such as nurse-initiated discharge. In the evacuation of the Cairns hospital during/before Cyclone Yasi, nurses demonstrated that they were able to discharge patients effectively and safely from the hospital. These learned skills should be retained post disaster, as this is evidence of advance practice in the clinical space. Recommendations on whether the nurses’ role could be extended during the disaster was not mentioned, nor was there any discussion regarding governance in relation to advance practice during this time.

During a disaster

Nurses were co-ordinators of care in a disaster; they did what they did in their normal day-to-day practice, albeit with a higher volume of patients, in different spaces, and often with little technology. This finding was mirrored by Hammad *et al.* (2017) who found that the day-to-day work remained, but there were changes to how space was used, processes, and practice skills employed, making the experience more intense. Even so, no job was too big or too small, nurses set up field hospitals (Jamieson, 2011; Queensland Workers Union, 2011), cleaned up (Jamieson, 2011; Ranse *et al.*, 2021 and performed administrative tasks (Ranse & Lenson, 2012). Multi-tasking and teamwork during a disaster is apparent in the wider literature, with nurses handling food storage, and other logistics while also responding to the health-care needs of the affected population (Hindriyastuti, Kako, Ranse, & Hutton, 2018).

During a disaster, all nurses triage on a large scale (Taylor *et al.*, 2003; Lancaster & Taylor, 2003), or during the 2009 Black Saturday bushfires, on a smaller scale (Williams, 2009; Martin, 2009; Ranse, Lenson, & Aimers, 2010; Ranse & Lenson, 2012). It is important to remember that triaging is not confined to the emergency department; nurses are constantly analysing their workload, the acuity of their patients, tasks at hand, and prioritising and re-prioritising their work (Gebbie,

Hutton, & Plummer, 2012). This everyday skill became more apparent as nurses take the lead in prioritising patient care during a disaster.

Many accounts showed that while the disaster response occurred, so too did the normal day-to-day business of the hospital, with nurses at the centre. As reported during the Queensland floods (Jamieson, 2011; Queensland Nurse, 2011), nurses became the focal point for information and resources, and were trusted members of the community. This is not surprising given that nurses are often rated as the most trusted profession in Australia (Australian Nurses Federation, 2021). The dedication of nurses cannot be disputed in these accounts. Nurses worked long hours, slept for a few hours, and often went back into their community to help with the clean-up (Jamieson, 2011). They worked while they were worried for loved ones, their pets, and their properties (Morris, 2002; Barlow, 2008; Williams, 2009; Martin, 2009).

Study limitations

In searching for relevant documents, many articles were difficult to access due to broken links and/or difficulty locating the original or full version. As such, due to the variability in the type and focus of documents, this review does not present a comprehensive and representative analysis of how nurses respond to disasters in Australia. Many manuscripts chosen for this review were narrative accounts of a nurse's experience of responding to a disaster. Although disasters such as bushfires, floods, and cyclones were discussed, as they are most frequently and perennially occurring in Australia, other types of disasters such as chemical, biological, radiological, nuclear and pandemics, are not described in the reviewed literature. It should also be noted that the roles of nurses and their scope of practice may differ based on the type of disaster. Internationally, there are manuscripts exploring the preparedness of nurse practitioners in a disaster situation; however, we were not seeking to explore this, and there is a dearth of literature exploring what 'advance nursing' is for the general nurse who responds to a disaster.

CONCLUSION

Nurses are constantly involved in the response to disasters and are often the first to respond. Nurses reported calling on ALL their skills that they had learned during disaster responses. These nurses are flexible and adaptable, taking on practical and leadership roles. Nurses are quick to find solutions, solve problems and when responding to a disaster, state that it is 'just what

you do'. Although this review aimed to identify advanced practice of nurses, it was difficult to determine which activities were advanced practice, such as an extended scope, and which activities were normal practice for the nurses responding; however, it is evident that nurses can work independently and to their scope of practice, even though this varies during a disaster. More research is required to better understand how the advanced practice roles of nurses contribute during disasters.

ACKNOWLEDGMENTS

The authors would like to acknowledge the assistance of Ms. Debbie Booth, Librarian, at the University of Newcastle.

DISCLOSURES

The authors have no conflicts of interest to declare.

AUTHOR CONTRIBUTIONS

Alison Hutton was responsible for: search terms, inclusion criteria, review of manuscripts, draft of the first manuscript, development of tables, and redrafting of the paper. Lisa Conlon was responsible for: search terms, inclusion criteria, review of manuscripts, critical review of manuscripts, development of Table 3, and redrafting of the paper. Mayumi Kako was responsible for: review of manuscripts, critical review of manuscripts, and development of Table 3. Sarah Olson was responsible for: search terms, inclusion criteria, review of manuscripts, and the study design. Rhonda Wilson was responsible for: search terms, inclusion criteria, review of manuscripts, study design, and redrafting of the paper. Karen Hammad was responsible for: search terms, inclusion criteria, and review of manuscripts. David Stewart was responsible for: search terms, and inclusion criteria. Jamie Ranse was responsible for: search terms, inclusion criteria, study design, review of manuscripts, and redrafting of the paper.

REFERENCES

- Al-Maaitah, R., Conlon, L., Gebbie, K., Hutton, A., Langan, J., Loke, A., et al. (2019). International Council of Nurses, Core Competencies in Disaster Nursing, Version 2.0. [Cited 10 May 2022.] Available from URL: http://www.icn.ch/sites/default/files/inline-files/ICN_Disaster-Comp-Report_WEB.pdf
- Anonymous. (2011a). Nurses and midwives create history during Cyclone Yasi. *Queensland Nurse*, 30(2), 16–19.
- Anonymous. (2011b). Nurses and midwives praised, State and

- territory News. *Australian Nursing Journal*, 18(8), 13.
- Anonymous. (2012). Reporting initiated discharge. *Australian Nursing Journal*, 19(4), 17–18.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. doi:10.1080/1364557032000119616
- Australian College of Nursing. (2021). Support for nurses during disruptive events. Canberra: Australian College of Nursing.
- Australian Government. (2021). COVID Safe App.
- Australian Nurses Federation. (2021). South Australian Branch. In Practice, [Cited 24 Sep 2022.] Available from URL: https://anmfsa.org.au/Web/News/2021/Nurses_yet_again_Australia_s_most_trusted.aspx
- Barlow, G. (2008). Nurses feel impact of climate change. *Australian Nursing Journal*, 15(10), 24–26.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research Psychology*, 3(2), 77–101.
- Buckis, C. (2003). Runaway train, The lamp, April, 25. Sydney: NSW Nurses Association.
- Colquhoun, H. (2016). Current best practice for the conduct of scoping reviews. [Cited 30 April 2019.] Available from URL: http://www.equator-network.org/wp-content/uploads/2016/06/Gerstein-Library-scopingreviews_May-12.pdf
- Fedele, R. (2020). In the line of fire, responding to Australia's bushfire crisis. *Australian Nursing and Midwifery Journal*, 26(10), 34–35.
- Filmer, L. B., & Ranse, J. (2013). Who is my leader? A case study from a hospital disaster scenario in a less developed country. *Australasian Emergency Nursing Journal*, 16(4), 170–174.
- Gebbie, K., Hutton, A., & Plummer, V. (2012). Chapter 8 - Update on competencies and education. *Annual Review of Nursing Research*, 30(1), 169–192.
- Hammad, K., Arbon, P., Gebbie, K., & Hutton, A. (2017). Why a disaster is not just normal business ramped up. Disaster response amongst ED nurses. *Australasian Emergency Care*, 21, 36–41.
- Harulow, S. (2002). Incredible nurses rise to Bali challenge. *Australian Nursing Journal*, 10(5), 5.
- Hayes, B. (2011). Renal dialysis service and patient evacuation during the Queensland Cyclone Yasi disaster. *Renal Society of Australasia Journal*, 7(2), 72–75.
- Haywood, B. (2020). Mental health nursing in bushfire-affected communities: An autoethnographic insight. *International Journal of Mental Health Nursing*, 29, 1262–1271.
- Hindriyastuti, S., Kako, M., Ranse, R., & Hutton, A. (2018). Nursing students roles and experiences of disasters in a nursing school. *Padjadaran Nursing Journal*, 7(1), 38–48.
- Institute of Health and Medicine (US), Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine. (2010). The future of nursing: Leading change, advancing health. Washington (DC). 7. National Academies Press (US).
- Jamieson, L. (2011). Rockhampton: Queensland Nurse Union (QNU), 7.
- Khalil, H., Micah, D., Peters, A., Pollock, D., Alexander, L., McInerney, P. *et al.* (2016). Conducting high quality scoping reviews-challenges and solutions. *Journal of Clinical Epidemiology*, 130, 156–160.
- Lancaster, L. & Taylor, R. (2003) Waiting to exhale.... the Bali Bombing. A nursing perspective from the staff of Royal Darwin Hospital. 5-8. [Cited 1 June 2022.] Canberra, Nursing Australia. Available from URL: www.nursing.aust.edu.au
- Lowe, G., Plummer, V., O'Brien, A.P., & Boyd, L. (2012). Time to clarify- the value of advanced practice nursing roles in health care. *Journal of Advance Nursing*, 68(3), 677–685.
- Martin, R. (2009). Black Saturday and the Victorian bushfires: Implications for advance nursing practice roles. *Australian Emergency Nursing Journal*, 12(2), 30–31.
- Morris, N. (2002). Australian nurses help tackle bush fires. *Nursing Standard*, 16(17), 4.
- Moynahan, L. (2011). The 2011 Queensland Floods: A dialysis clinical nurse managers' personal account. *Renal Society of Australasia Journal*, 7(3), 56–58.
- Nursing and Midwifery, Board of Australia (2020). Fact sheet: Advanced nursing practice and speciality areas within nursing. [Cited 4 June 2022.] Available from URL: <https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/FAQ/fact-sheet-advanced-nursing-practice-and-specialty-areas.aspx>
- PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses. (2021). [Cited 3 Oct 2021.] Available from URL: <http://www.prisma-statement.org/Extensions/ScopingReviews>
- Queensland Nurse (2011) The floods we won't forget, 30(1), 14–17.
- Quirk, T. (2009). Bushfires take toll on nurses. *Australian Nursing Journal*, 16(8), 5.
- Ranse, J., Lenson, S., & Aimers, B. (2010) Black Saturday and the Victorian Bushfires of February 2009: A descriptive survey of nurses who assisted in the pre-hospital setting. *Collegian*, 17, 153–159.
- Ranse, J., & Lenson, S. (2012). Beyond a clinical role: Nurses were psychosocial supporters, coordinators and problem solvers in the Black Saturday and Victorian bushfires in 2009. *Australasian Emergency Nursing Journal*, 15, 156–163.
- Ranse, J., Hutton, A., Wilson, R., & Usher, K. (2015). Leadership opportunities for mental health nurses in the field of disaster preparation, response, and recovery. *Issues in Mental Health Nursing*, 36(5), 391–394.
- Ranse, J., Arbon, P., Cusack, L., & Shaban, R. (2021). Phenomenology of Australian civilian hospital nurses lived experiences of the out-of-hospital environment during a disaster. *Collegian*, 29(1), 141–146. doi.org/10.1016/j.colegn.2021.07.009
- Rokkas, P., Cornell, V., & Steenkamp, M. (2014). Disaster preparedness and response: Challenges for Australian public health nurses - a literature review, *Nursing and Health Sciences*, 16, 60–66.
- Royal Commission. (2020). The Royal Commission into National Natural Disaster Arrangements. Canberra, ACT: Australian Government.
- Taylor, R., O'Connor, B., St Leone, M., & Stoner Halpern, J. (2003). The voice of experience: Australian Nurses Caring for Victims of Bali Bombing. *Disaster Management and Response*, 1(1), 2–7.
- Tricco, A., Lillie, E., Zarin, W., O'Brien, K., Colquhoun, H., Levac, D. *et al.* (2018). PRISMA Extension for Scoping Reviews (PRISMA-SCR): Checklist and explanation. *Annals of Internal Medicine*, 169, 467–473.
- United Nations Office for Disaster Risk Reduction (UNDRR). (2020). The human cost of disasters: An overview of the

- last 20 years (2000–2019). [Cited 6 July 2022.] Available from URL: <https://reliefweb.int/sites/reliefweb.int/files/resources/Human%20Cost%20of%20Disasters%202000-2019%20Report%20-%20UN%20Office%20for%20Disaster%20Risk%20Reduction.pdf>
- Veenema, T. G., Griffin, A., Gable, A. R., MacIntyre, L., Simons, R. N., Couig, M. P. *et al.* (2016). Nurses as leaders in disaster preparedness and response—A call to action. *Journal of Nursing Scholarship*, 48(2), 187–200. doi: 10.1111/jnu.12198. Epub 11 Feb 2016.
- Williams, J. (2009). Bushfire disaster: A rural nurses' s perceptives. *Australian Nursing Journal*, 16(7), 17.
- World Health Organization. (2022). Economic losses, poverty and disasters 1998–2017. City: Centre for Research and Epidemiology of Disasters and United Nations Office for Disaster Risk Reduction. [Cited 7 May 2022.] Available from URL: https://www.preventionweb.net/files/61119_credeconomiclosses.pdf