The lived experience of nursing in the emergency department during a disaster

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CANDIDATE'S DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed

Karen Hammad

Dated: 21/10/2016

THESIS SUMMARY

When a disaster has impacted a community hospitals play an integral role in the healthcare response as a place where people go to seek refuge and treatment. This places the emergency department (ED) at the frontline of the hospital response and emergency nurses as first responders triaging, treating and managing the care of people affected by a disaster. While there is a plethora of literature written about the healthcare response to disasters, there is a relatively small amount about the role and experiences of nurses working in the ED during a disaster response. At present, many of the publications that inform what we know about nursing in the ED during a disaster are narrative accounts describing the ED response to a single event. This study is unique because it explores the collective experience of nursing in the ED during a disaster across a variety of different disaster events and from the perspectives of nurses in different geographical contexts.

Grounded in the tradition of hermeneutic phenomenology, with a methodological approach informed by van Manen's insights the aim of this study is to generate meaning and understanding in the experience of working as a nurse in the ED during a disaster. Nurses from different countries around the world participated in interviews about the phenomenon of working as a nurse in the ED during a disaster. The findings of the study emerge through thematic analysis and guided reflection as two different perspectives on nurses' experience with the phenomenon. The first perspective of the findings is presented as a discussion of five distinct Moments of Disaster Response; *notification, waiting, patient arrival, caring for patients* and *reflection.* The second perspective of the findings explores five existential themes common to everyone's lifeworlds; *relationality* (lived body), *corporeality* (lived self), *spatiality* (lived self), *temporality* (lived time) and *materiality* (lived things). Both perspectives are considered together to uncover the meaning that is embedded within the experience of nursing in the ED during a disaster.

Two key findings emerge from this research. Firstly that emergency nurses are motivated to participate in disaster response by altruistic endeavours. Nurses want to support their ED colleagues and help the people affected by disaster, and in

doing so overlook their own needs. The second key finding of this research highlights that disaster response presents a unique set of challenges that make it different from the everyday experience of working in the ED. Challenges associated with disaster response include changes to the ED space, caring for unfamiliar patient presentations, a feeling of being overwhelmed and an emotional impact. This thesis contributes to an enhanced understanding of the experience and meaning behind working as a nurse in the ED during a disaster response. This knowledge may better inform preparedness activities and future research direction in this area.

LIST OF ABBREVIATIONS

ACEM	Australasian College of Emergency Medicine
ACEN	Australian College of Emergency Nursing
CBR	Chemical, Biological, Radiological
CBRN	Chemical, Biological, Radiological, Nuclear
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosives
CENA	College of Emergency Nursing Australasia
CENNZ	College of Emergency Nurses New Zealand
CRED	Centre for Research in Epidemiology of Disasters
ED	Emergency Department
EMS	Emergency Medical Services
ENA	Emergency Nurses Association
EuSEN	European Society for Emergency Nursing
FEN	Faculty of Emergency Nursing
GP	General Practitioner
IFRC	International Federation of the Red Cross and Red Crescent Societies
ISDR	International Strategy for Disaster Reduction
MCI	Mass Casualty Incident
NHMRC	National Health and Medical Research Council
PPE	Personal Protective Equipment
PTSD	Post Traumatic Stress Disorder

RDH	Royal Darwin Hospital
SARS	Severe Acute Respiratory Syndrome
SBREC	Social and Behavioural Research Ethics Committee
UN	United Nations
UNISDR	United Nations International Strategy for Disaster Risk Reduction
USD	United States Dollar
WADEM	World Association of Disaster and Emergency Medicine
WHO	World Health Organisation

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WORKS ARISING FROM THIS THESIS

Peer reviewed publications

Hammad, K, Arbon, P, Gebbie, K, Hutton, A, 'Nursing in the emergency department (ED) during a disaster: a review of the current literature', Australasian Emergency Nursing Journal, 2012; 15(4); 235 – 244.

Conferences

Hammad K 'Nursing in the ED during a disaster', IPRED IV, Tel Aviv, Israel, January 2016.

Hammad K 'Nursing in the ED during a disaster', Royal Adelaide Hospital, Emergency Department, South Australia, August 2016.

Hammad K 'Understanding the lived experience of nursing in the emergency department (ED) during a disaster guided by hermeneutic phenomenology', Final PhD Presentation, Flinders University, School of Nursing and Midwifery, South Australia, September 29th 2016.

Hammad K 'Nursing in the ED during a disaster', Flinders Medical Centre, Emergency Department, South Australia, September 2015.

Hammad K 'Nursing in the ED during a disaster', World Congress Disaster and Emergency Medicine, Manchester, UK, 28th 31st May 2013.

Hammad K 'Nursing in the ED during a disaster', Xiangya International Nursing Conference, Changsha, China, 28th – 30th June 2013.

Media

2013 – Simon Royal, ABC News, TV Interview on 'Preparing for disaster': http://www.abc.net.au/news/2013-09-27/preparing-for-disaster/4986356

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DEDICATION

This PhD thesis is dedicated to the thirteen nurses who sacrificed their time to participate in this research. Although you remain anonymous in this thesis you will always be remembered by me for your openness and honesty. Without you this PhD wouldn't be possible.

PROLOGUE

The phone beside me flashes and the screen lights up with a message: <The world is at war! Turn the TV on>. I turn the television on and watch dumbfounded; footage of a plane flying into the World Trade Centre. As I watch the images on the screen in front of me my mind wanders to the nurses working in the New York City emergency departments (ED) where any survivors would inevitably go to seek treatment. I wonder what it must be like for them in this moment. At the time of the World Trade Centre attack in 2001 I was working as an emergency nurse. Until this time I had never considered the likelihood of a disaster response in my ED but with the advent of the World Trade Centre attack the possibility of disaster response was raised and a general feeling of uncertainty was felt amongst myself and my colleagues. Uncertainty related to lack of experience and exposure, because we had never experienced a disaster response and we had never been provided with education or training on how to manage a disaster. The days that my colleagues and I had labelled 'a disaster' were abundant; days with patient lined corridors, a full waiting room and the arrival of yet another critically ill or injured patient. But, those days are different to what I imagined was happening in New York right now. As I watched the terror, chaos and confusion playing out on the screen in front of me that day, I began to wonder what it would be like if something like this happened in my city.

CHAPTER ONE: FOUNDATIONS

Chapter overview

The aim of Chapter One is to establish the background to the study and introduce the reader to concepts and terms that are central to this research. To orientate the reader to the phenomenon under study this chapter begins by introducing the individual constructs of the phenomenon and how they interrelate with each other. This is followed by a rationale for the study and discussion of the research question, objectives of the study and the methodology that underpins this research. This chapter concludes with an overview of the entire thesis.

The phenomenon

The phenomenon under study is the lived experience of nursing in the ED during a disaster. In order to orientate the reader to the research it is essential to explore the individual components of the phenomenon. That being said, the remainder of this section will provide an overview of the terms disaster, emergency department (ED), emergency nurse and how they interrelate with each other.

Disaster

While more predictable in some regions than in others, a disaster can occur anywhere at any time, meaning that the threat of disaster exists for everyone and no community is exempt. The myriad of causative factors and the range of consequences that ensue make every disaster unique and therefore difficult to prepare for and complex to manage. Disasters are having an increasing effect worldwide. Between 1994 and 2013 disasters hit every continent in the world (CRED 2015, p. 10), emphasising that no community is completely immune to the threat of disaster. The economic impact, number of deaths and people affected by disasters worldwide is substantial (Andrews & Quintana 2015, p. 2). In 2013 a total of 330 natural disasters were reported with an economic impact of $118.6 (USD) billion and affecting 96.5 million people worldwide (Guha-Sapir *et al.* 2014, p. 13). The increasing impact of disasters can be assumed to be significantly higher than reported as these figures do not take into account technological or man-made

events that are also reported to be having an increased economic and social cost worldwide (Coleman 2006; Yasuyuki *et al.* 2011). This is reflected in the preamble to the 'Sendai Framework for Disaster Risk Reduction 2015 – 2030', which states that more than 1.5 billion people worldwide have been affected by disasters during a 10-year period from 2005 to 2015 with economic losses of 1.3 trillion (UN 2015, p. 10).

A disaster is broadly understood to be an event that causes widespread damage and destruction and has a significant impact on society. The word disaster is used loosely in our everyday language to describe a challenging event or circumstance. For example; someone might describe the date they went on last night as a 'disaster' or a Saturday night shift in the ED as a 'disaster', both for very different reasons. In both of these situations the word disaster has negative connotations and is used to describe something that is unanticipated or unwelcome. In our everyday conversation the word disaster is therefore broadly taken to mean a sudden accident or a natural catastrophe that causes great damage or loss of life (Oxford 2016). To further understand what a disaster is, it is therefore useful to explore the definition of the word disaster in greater detail.

Disaster is a relative term, meaning simply that the definition of disaster is dependent on the person or organisation that is referring to it. According to Mayner and Arbon (2015, p. 23) in the English language alone there are around 128 definitions of the word disaster highlighting that disaster is a very broad concept. Consider for example the following two definitions of disaster:

> *1. A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources (ISDR). 2. Situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance (CRED). 3. A term describing an event that can be defined spatially and geographically, but that demands observation to produce evidence. It implies the interaction of an external stressor with a human community and it carries the implicit concept of nonmanageability (WHO 2016).*

> *the unplanned interruption of normal business processes resulting from the interruption of the IT infrastructure components used to support them (Toigo 2002).*

The first definition from the World Health Organisation (WHO) combines definitions from the International Strategy for Disaster Reduction (ISDR) and the Centre for Research on the Epidemiology of Disasters (CRED). The definition from the WHO has a focus on health in that it stresses the effect to humanity. In comparison the second definition of the word disaster is relevant to the technology sector and makes no mention of the human impact.

Beyond official definitions the word disaster is often used colloquially to refer to a hazard such as an earthquake or a tsunami. This perhaps stems from the fact that disasters are classified based on the hazard that causes the event, such as a disaster caused by an earthquake. In fact, the earthquake is a hazard and the disaster only arises for humans when the earthquake causes significant damage to infrastructure, death, injury and ongoing health consequences for the affected community. An earthquake occurring a long way offshore and deep beneath the Indian Ocean may be a disaster for the sea life in that area, but is not considered a disaster for humans if it has no significant impact on humanity. For a disaster to occur a combination of factors such as exposure to a hazard, pre-existing vulnerabilities and insufficient capacity to cope is required (United Nations International Strategy for Disaster Risk Reduction (UNISDR) 2007, p. 8). A disaster is therefore the consequence of an event, rather than the event itself.

Disasters are often classified according to their speed of onset (sudden or slow), their cause (natural or man-made), or their scale (major or minor) (WHO 2002, p. 10). However, in recent years it has become necessary to expand disaster vocabulary in recognition of the fact that some disasters can result from several different hazards or a complex combination of both natural and man-made causes and have different causes of vulnerability (International Federation of Red Cross and Red Crescent Societies (IFRC n.d.). An example of this has occurred in countries such as Palestine, Syria and Yemen where a multitude of factors such as civil unrest, armed conflict, illegal occupation and natural events have led to humanitarian

disasters. According to the WHO (2003, p. 11) some of the most serious disasters and emergencies are created or further complicated by conflict and the forced movement of large numbers of people. The term that is used to describe this type of event is 'Complex Emergency' which is described by the WHO (2002, p.12) as:

> *Situations of disrupted livelihoods and threats to life produced by warfare, civil disturbance and large-scale movements of people, in which an emergency response has to be conducted in a difficult political and security environment.*

The International Federation for the Red Cross and Red Crescent Societies (IFRC n.d.) further characterise these events by their extensive loss of life, displacement of populations, widespread damage to societies and economies, the need for large-scale humanitarian assistance, the hindrance or prevention of humanitarian assistance by political or military constraints and significant security risks for humanitarian workers. These events however are relatively easy to predict due to pre-existing socio political instability in the region. Another term; Black Swan event has arisen to describe events that are highly improbable and difficult to foresee. In the prologue to his book the person who gave name to this phenomenon, Nassim Taleb (2007, p. xxii) characterises a Black Swan event as something that comprises the following three attributes:

- It lies outside our realm of regular expectations
- It carries extreme impact
- And human nature makes us concoct explanations for its occurrence *after* the fact, making it explainable and predictable.

This term has been used to describe disaster events that were considered improbable, unthinkable and were not specifically part of existing disaster plans such as the 2001 World Trade Centre attack and the 2011 Fukashima Daiichi disaster (Taleb 2007; Shrader-Frechette 2011; Cole & Connell 2012).

Key to our understanding of disasters is an acknowledgement that the impacts of disasters vary and are dependent on a number of factors such as the lens through which we are looking, the type of hazard, pre-existing vulnerabilities and an ability

to cope. Superficially though, disasters are often viewed through the media lens as large overwhelming events that cause wide spread destruction. Consider for a moment the arrival in quick succession of four critically injured patients to a small rural hospital. Due to lack of physical bedspace and staff to manage the patients the hospital may quickly become overwhelmed creating a disaster situation. On the other hand, a large inner city hospital faced with a similar situation may be able to easily absorb this number of patients as they not only have more bedspace and staff but they can draw from a wider range of hospital resources than the smaller hospital can. The arrival of four critically unwell patients in this instance would not be recognised as a disaster for the better resourced ED.

From a health care perspective a disaster may affect the ability of a hospital to function as it normally would. Healthcare facilities may be damaged and unable to provide their usual level of service to new patients, existing patients may need to be evacuated and emergency services might not be able to gain access to injured people and transport them to healthcare facilities due to the destruction of infrastructure (Zibulewsky 2001; Powers & Daily 2010; Andrews & Quintana 2015). Essential services such as gas, electricity, water supply and digital systems may be disrupted and hospitals may be overwhelmed by people looking for treatment and refuge following the event. Furthermore, health consequences on the community such as increased risk of communicable diseases, premature death, decreased quality of life, psychological effects and food shortages may continue for some time after the event placing a further burden on the existing healthcare system (Zibulewsky 2001).

According to Mayner and Arbon (2015, p. 24) a capacity to overwhelm existing resources resulting in the need for outside assistance is a feature that is central to most definitions of disaster, including the following definition of disaster from the World Association of Disaster and Emergency Medicine (WADEM 2002):

> *An event that interrupts the normal functioning of a community, resulting in the need for external human and/or physical resources to assist in a response beyond that of the normal day-to-day operational capacity for that community.*

As an organisation WADEM has relevance for emergency nurses in the context of disaster in that it is a multidisciplinary professional association whose mission is the global improvement of prehospital and emergency health care, public health, and disaster health and preparedness (WADEM 2016). Definitions offered by nursing organisations such as the International Council of Nurses (WHO/ICN 2009) default to the WHO definition mentioned previously (p. 2). Beyond recognising that a disaster is something that overwhelms existing capabilities, I have deliberately refrained from identifying a specific definition to underpin this research for two reasons. The first is that I believe the word 'disaster' is a relative term and the definition will vary depending on who is using it. Secondly, I wanted to leave it open for participants to determine what a disaster is for them. Hopefully this will allow the meaning of disaster for emergency nurses to emerge unimpeded.

Emergency Department

A predictable outcome of disasters is that they will have an impact on the health status of the surrounding community. Whether the event is pandemic in nature and creates widespread illness or whether the event causes widespread damage to infrastructure which results in injury and death, the health system plays a key role responding to the medical needs of the community affected by the disaster. Therefore in the immediate aftermath of a disaster hospitals become a first point of call as a place to seek treatment or refuge. Patient presentations to the ED following a disaster are dependent on the type of event and may be as part of a coordinated response by the emergency services so as to not overwhelm any one ED. However, this is not always the case and there is much evidence to suggest that patients will self-present to the nearest hospital following a disaster (Amundson & Burkle 1995; Hogan *et al.* 1999; Zibulewsky 2001; Richardson & Kumar 2004; Reilly & Markenson 2010). This places staff working in the ED at the frontline of disaster response as one of the first groups of health care professionals providing the initial medical care to the disaster affected population.

Historically, the need for emergency care grew as hospitals became more popular in the 1800's and since this time hospital ED has evolved from a room in or near the

operating suite and undesirable locations such as the hospital basement to dedicated and specifically designed areas (Jones 2000; Schriver *et al.* 2003; Snyder *et al.* 2006). In the late 1950's in the United States of America (USA) a number of factors led to the development of emergency departments. These included increases in the population, emergency presentations, chronic disease, violence and crime. Additionally, a decrease in General Practitioners (GP) and well-trained doctors lead to the development of emergency medicine and recognition as a medical specialty in the late 1950's (Fink 2006). The role of nurses was ever present during this transition, initially as a ward nurse called to the ED when a patient arrived and later as a dedicated nurse situated in the ED (Fink 2006; Valdez 2008).

Since the 1970's the location, size and function of emergency departments in many countries has evolved dramatically to become a purpose built department which has major diagnostic and resuscitation capabilities (Schriver *et al*. 2003; Snyder *et al*. 2006). In many communities the ED is considered to be the front door of the hospital as it is often where patients begin their hospital journey. In Australia and in other parts of the developed world, the ED is a designated area in the hospital that is organised to assess and provide acute or urgent emergency care to people with serious injuries or illnesses (College of Emergency Nursing Australasia (CENA) 2007; Australasian College of Emergency Medicine (ACEM) 2014). While Australia has a structured approach and expectations around the designation and management of ED, the concept, setting, staffing and naming varies from country to country or region to region across the world.

Today the ED environment is set up to meet the demands of a range of patient conditions and injuries across the life span ranging from minor illness and injury to life threatening presentations (Fry 2016, p.4). Within the ED healthcare staff of different professions work side by side to deliver patient care. This workforce is driven by case-mix, local demand and presentation rates (Fry 2016, p. 5) and varies from department to department. From an Australian perspective however, an ED workforce will likely include nursing, medical, allied health, transport and administrative staff (Fry 2016, p. 5). In other regions the ED is referred to by other terms including; Accident and Emergency, Emergency Room and Casualty.

Throughout this thesis the term 'Emergency Department (ED)' is consistently used and refers to the discussion above as a designated area in a hospital, however named or staffed, which provides acute or urgent emergency care to people with serious injuries or illnesses.

Emergency Nurse

It wasn't until the 1970's in the USA, UK and Australia that the specialty of emergency nursing began to be recognised (Schriver *et al*. 2003; Hudson & Marshall 2008; Valdez 2008). Despite this, nurses have played a substantial role in the initial assessment and management of patients attending hospital for many decades. The scope of work undertaken by emergency nurses today depends on their level of training, geographical location, experience and employer. However, central to their role is the delivery of care to a diverse population which requires them to possess a broad knowledge base and have the ability to respond promptly to unplanned situations and undertake effective assessment and treatment of undiagnosed health problems (Fry 2008; Manton n.d.). Nurses working in the ED are involved in triaging, assessing, treating, managing and caring for patients. They liaise with other professionals, hospital departments and organisations to ensure the most appropriate management of their patients.

In many countries emergency nursing practice has evolved in the past 20 years due to the introduction of nurse led services, nurse led triage and nurse practitioner roles (Jones *et al.* 2003; Solheim 2016). Additionally, the scope of practice undertaken by nurses in the ED has changed significantly as a result of increased demand for patient care, more complex caseloads, nursing staff shortages, an ageing population, cultural diversity and worldwide technological advancement (Jones *et al*. 2003; AHWAC 2006; Valdez 2008; Duffield *et al.* 2010; Callander & Schofield 2011; FitzGerald 2016; Hammad *et al.* 2016; Solheim 2016). Throughout this thesis the terms 'nurse working in the ED' and 'emergency nurse' are used interchangeably to denote a nurse of any level who works regularly in the ED or in an environment where nurses provide acute or urgent emergency care to people with serious injuries or illnesses.

The environment within which emergency nurses work today is faced with daily challenges related to increased patient numbers, patient flow in and out of the ED, overcrowding, violence and nursing shortages (Vieth & Rhodes 2006; Kilcoyne & Dowling 2007; Ross-Adjie *et al.* 2007; Forero & Hilman 2008; Fry 2008; Gilchrist *et al.* 2011; FitzGerald *et al.* 2012; Anneveld *et al.* 2013; ACEM 2016). These issues may be further exacerbated during a disaster where the ED will likely see a significant increase in the number and acuity of patients presenting for treatment.

Challenges associated with nursing in the ED during a disaster are reported in the literature in relation to changes to nursing practice, the ED setting and staffing (Hammad *et al.* 2012). Practice changes such as decontaminating patients or donning personal protective equipment (PPE) prior to caring for patients are predominately related to responding to chemical, biological, radiological, nuclear or explosive (CBRNE) events (Farquharson & Baguley 2003; Tham 2004; FitzGerald *et al.* 2010). Changes to the setting occur where decontamination units and triage areas are set up outside the ED or where the ED has been damaged or affected (Farquharson & Baguley 2003; Taylor *et al.* 2003; Tham 2004; Behney *et al*. 2006; Timm & Reeves 2007; Dolan *et al.* 2011). Furthermore staffing in the ED will fluctuate during a disaster and staff numbers may increase as nurses from other areas and departments are sent to the ED to bolster the response (Hammad *et al.* 2012) or may decrease due to staff illness or injury and barriers related to personal and family commitments (French *et al.* 2002; Considine & Mitchell 2008; O'Sullivan *et al.* 2008; Duong 2009; Dolan *et al.* 2011; Mitchell *et al.* 2012; Hammad *et al.* 2012).

Given the increasing frequency and impact of disasters there is a need for nurses to be well prepared for managing these unpredictable events. However, current research, that describes the role and experience of nurses in the ED during a disaster, highlights a low level of preparedness and limitations in disaster training for emergency nurses (French *et al.* 2002; Riba & Reches 2002; Rassin *et al.* 2007; Timm & Reeves 2007; Considine & Mitchell 2008; Forero & Hillman 2008; O'Sullivan *et al.* 2008; Hammad, Arbon & Gebbie 2010). Additionally, despite strong discussion focused on the need for more disaster education and training for emergency

nurses, there is no consensus as to the most appropriate approach. Furthermore, there is no evidence to suggest that structured education and training is the most appropriate way to adequately prepare nurses for disaster response in the ED. This emphasises the need for further research to generate an understanding of nursing in the ED during a disaster to inform the preparedness of this group of nurses.

When considering what is known about nursing in the ED during a disaster from the literature and in relation to the information presented thus far; that disasters are occurring with increasing impact across the world and that emergency nurses are often a first point of contact for people affected by disaster, gaps in understanding become evident and questions emerge. For example, there is evidence in the literature that the ED changes during a disaster, but it is unclear from the existing literature what this means for nurses and how it affects them. There is suggestion that emergency nurses are lacking in preparedness and need more disaster education and training, but it is not evident yet what is required to better prepare them.

Rationale for the study

As a country Australia has relatively limited experience with catastrophic disasters that have overwhelmed the healthcare system (Hammad *et al*. 2012, p. 236). Events such as Cyclone Tracy (1974), the Granville train disaster (1977), Ash Wednesday bushfires (1983) and the Newcastle earthquake (1989) are sentinel disaster events in Australian history that significantly impacted the health system and shaped the way we mitigate against and respond to future disasters (Walker 2009; McNamara 2012; Peters & McEntire 2014). More recent events such as Cyclone Yasi (2011), Victorian bushfires (2012), Queensland floods (2012 & 2013), Tasmanian bushfires (2013), the Nowra floods (2015) and South Australian floods (2016), indicate that Australia is not immune from natural disaster. Other events such as the Port Arthur massacre (1996) and the Martin Place siege (2015) remind us that the threat of man-made events is also real. Australian emergency nurses have also been involved in disaster training delivery and disaster response in neighbouring countries affected by disaster such as Pakistan floods (2010), Christchurch earthquake (2011),

Typhoon Haiyan (2013), Solomon Island Dengue outbreak (2013), Nepal earthquake (2015), Cyclone Pam (2015) and Cyclone Winston (2016). Additionally, the Bali bombing (2002) and Ashmore reef disaster (2009) which resulted in casualties being sent to Australian emergency departments are examples of offshore events that have impacted Australians and which Australian's have had a role in responding to.

The lessons learned from these events provide an opportunity to better prepare nurses for future disaster response. However, in comparison to the amount of literature written about disasters, there is relatively little written from the nursing perspective or concerning nursing experience of disaster response. Existing research published exclusively about nursing in the ED during a disaster is written largely in relation to hypothetical events (French *et al.* 2002; Considine & Mitchell 2008; Duong 2009; Hammad *et al*. 2010; Hammad *et al*. 2012; Mitchell *et al*. 2012; Whetzel *et al.* 2012; Arbon *et al.* 2013a & 2013b; Ranse *et al*. 2013; Bell *et al.* 2014; Seyedin*et al.* 2015; Alzhani & Kyratsis 2016). Research that focuses on actual events is written in narrative form and describes the response from an individual nursing or whole departmental perspective (Amundson & Burkle 1995; Collins 2001; Frank 2001; Yip 2002; Taylor *et al*. 2003; Battle 2007, Richardson *et al.* 2013; Lenehan & Hughes 2014). Therefore, much of what informs the experience of nursing in the ED during a disaster is about what nurses did or what happened in the ED, with little discussion of what the experience was *really like* for nurses and what the experience means to nurses. None of the literature that informs what is known about nursing in the ED during a disaster describes the collective experience across different disasters making it difficult to make generalisations that could inform disaster preparedness of emergency nurses. All of the literature describes a response to a single event such as a bombing or a type of event such as terror attacks. Additionally, while there is a plethora of information and publications about disasters and disaster response, the amount of research that specifically addresses the role and experience of emergency nurses in disaster response is relatively limited. Existing literature that does inform the role and experience of emergency nurses in disaster response is largely descriptive or based on, as yet, hypothetical disaster events. A more comprehensive discussion of the literature

that informs current understanding of nursing in the ED during a disaster is presented in Chapter Two.

Research Question

In order to know how to prepare nurses for disaster response, it is essential to understand what the experience of working during a disaster response is actually like and how it is understood within the lived world of the emergency nurse. Therefore, drawing on experiences of nurses around the world who have responded to different types of disasters may help to identify commonalities in the experience and meaning associated with working as a nurse in the ED during a disaster. This may be useful to better understand the preparedness needs of emergency nurses as well as to drive further policy, education and research. The research question emerged not only through personal interest and desire to understand more about the lived experience of nursing in the ED during a disaster response, but also in response to the general feeling of limited preparedness that was accentuated initially by the World Trade Centre attack and further highlighted by existing literature on the topic. The question that drives this research is the same one that inspired it; '*What is it like to work as a nurse in the ED during a disaster response?*'

Research Objectives

The main aim of this research is to explore the lived experience of nurses who have worked in the ED during a disaster response and to therefore respond to the question *'What is it like to work as a nurse in the ED during a disaster response?'* This will be achieved through the following four objectives:

- Explore the experiences of nurses who have worked in the ED during a disaster response
- Explore this experience across different disaster contexts and situations
- Explore the understanding of the phenomenon and the meaning of disaster for nurses working in the ED
- Recommend strategies to respond to the findings.

Methodological Approach

To respond to the research question and objectives of the study a methodology that allows for exploration of the human lived experience is most appropriate. Phenomenology, which is broadly understood to be the study of human lived experience, therefore presents as an appropriate philosophical framework and methodology in which to position this research. More precisely the branch of phenomenology known as hermeneutic phenomenology underpins this research. This approach to conducting research extends beyond pure description of the lived experience which phenomenology is known for and situates the research in an interpretative framework that aims to generate meaning and understanding within the experience. Further influence is drawn from the methodological insights of contemporary phenomenologist Max van Manen. The philosophical and methodological approach to this research will be discussed in greater detail in Chapter Three and Chapter Four of this thesis.

Overview of the thesis

The researcher is an integral part of the phenomenological research process and the use of first person in writing serves to bridge the separation that is often evident between the activity of research and reporting of the research (van Manen 2015, p. 364). For this reason I have deliberately used first person throughout this thesis to demonstrate my own embeddedness within the research.

This thesis is divided into eight chapters. The first four chapters provide background to the research. This chapter – CHAPTER ONE - FOUNDATIONS - describes the evolution and significance of the research and anticipates the layout of the remainder of the thesis. CHAPTER TWO – BACKGROUND - describes the literature that informs what is currently known about nursing in the ED during a disaster response. This discussion highlights gaps and assumptions in current thinking and provides further justification for the direction of this research. CHAPTER THREE – PHILOSOPHICAL FOUNDATIONS - examines the methodology that underpins this study. An overview of the development and central tenets of hermeneutic phenomenology is provided leading to a justification for its applicability as a

methodology to underpin the research. CHAPTER FOUR – RESEARCH APPROACH - describes the approach to research largely inspired by van Manen and describes the steps taken in the development and analysis of this research linking the methodology to the method.

The middle section of this thesis explores the findings of the research. CHAPTER FIVE – MOMENTS OF DISASTER RESPONSE - presents the findings of the research as five distinct moments. Each moment emerged through thematic analysis as a singular theme common in the collective experience of nurses who participated in this research. This chapter concludes with a narrative description of what it might be like to work as a nurse in the ED during a disaster based on the moments of disaster response. CHAPTER SIX – LIFE EXISTENTIALS - explores the research findings through an existential lens. A guided reflection based on five life existentials common to each human's life world aims to uncover meaning within the experience of nursing in the ED during a disaster. CHAPTER SEVEN – DISCUSSION OF THE FINDINGS - considers the findings from the thematic analysis and guided reflection to present characteristics of the phenomenon that are common within the collective experience of nurses who participated in this research. The aim of this chapter is to uncover the meaning that is embedded within the experience.

The thesis concludes with CHAPTER EIGHT –RECOMMENDATIONS AND CONCLUSIONS – which summarises the research and identifies the key findings and new knowledge. Implications for clinical practice, policy change, disaster education, future research directions for the specialty of emergency nursing are also considered across the disaster cycle. A reference list and relevant appendices follow at the end of the thesis.

Summary

This chapter demonstrates the increasing impact of disasters globally. Furthermore the impact of disasters on the health of a community identifies the need for an immediate health response which includes emergency nurses. Despite the assured role of emergency nurses in disaster response a brief synopsis of existing literature

suggests that emergency nurses are underprepared for disaster response. Furthermore, existing literature about nursing in the ED during a disaster response is relatively limited and largely consists of narrative accounts of singular events. These factors highlight the significance of the research in developing a deeper understanding of the role and experience of nurses working in the ED during a disaster response. Underpinned by a hermeneutic phenomenological framework this research seeks a response to the question: *what is the experience of nursing in the ED during a disaster response?* The next chapter provides a deeper exploration of the existing literature, which informs what is currently known about emergency nurses and disasters.

CHAPTER TWO: BACKGROUND

Chapter overview

The previous chapter introduced the reader to the phenomenon under study and provided an overview of the thesis. Additionally, Chapter One presented a rationale for undertaking the research by highlighting the role of emergency nurses as a first point of contact for people presenting to hospitals after a disaster. This chapter will expand on this to clarify what is currently known about emergency nurses and disasters in relation to the ED setting. Chapter Two begins by explaining the search process and providing an overview of the literature. This is followed by a discussion of major themes in the literature and concludes by identifying gaps in knowledge that help to drive this research.

Literature search

If you key the word 'disaster' into any search engine a plethora of information will emerge. The wide range of articles from many different disciplines, demonstrates the far-reaching effects that disasters have on our society. A more focused search using the terms 'disaster' and 'medicine' elicits thousands of publications which include journal articles, editorials, conference papers, book chapters and books with publications ranging from as early as 1946 until present day. If the term 'nurse' is substituted for 'medicine', the number of publications reduces by approximately 75% indicating that there are relatively fewer publications that explore disasters from the nursing perspective.

This review of the literature aims to describe what is currently known about emergency nurses and disasters. Although the focus of this thesis is disaster response, this review of literature is expanded to explore other aspects of the disaster continuum such as preparedness and recovery. A broad exploration of the topic guided by the question 'What is known about emergency nursing and disasters in the ED setting?' will help to identify existing knowledge deficits. Electronic databases including Cambridge, CINAHL, Cengage, Google Scholar, OVID, PubMed, Science Direct and Wiley were searched to identify literature that informs

the research question. The terms ‘emergency department’ and ‘disaster’ or a combination of other terms such as ‘A&E’, ‘emergency room’, ‘casualty’, ‘mass casualty’, ‘terror attack’, ‘CBRNE’, ‘preparedness’, ‘response’, ‘recovery’, ‘impact’ were entered into search engines with the word ‘nurse’. Variation in definitions and local and international terminologies made it necessary to include a multitude of terms in the search. Although many of the articles were duplicated across different search engines this search led to more than 800 articles, reviews, editorials, conference papers, book chapters, books and newspaper articles dating back to 1959.

Due to the large number of publications that emerged from an initial search preliminary inclusion criteria was introduced so as to focus the search. The first criteria to be applied was a search period ranging from 1995 until 2016 for articles that were published or discussed events that occurred within this time range. This time range was chosen so that publications would be relevant to contemporary emergency nursing practice, reflecting significant changes that have occurred over the past two decades which were discussed previously on page 8. The second criterion for inclusion was articles published in English. The main reason for this is that it is my main spoken language and it is therefore an unavoidable limitation. Additionally, it is common practice for researchers to publish in English language journals. Finally, the search was limited to indexed, peer-reviewed literature.

With these parameters in place approximately 450 articles remained of which titles and abstracts were reviewed for relevance to the remaining inclusion and exclusion criteria. Articles were then included for review if they contained substantial discussion about emergency nurses and their experience or perceptions of disaster or other extreme events such as major incident, mass casualty, terror attack or CBRNE. These terms were included not only due to a wide variation in terminology, but because these events are also known to disrupt the normal functioning of the ED. Publications were also included for review if they described the ED response to a disaster or other extreme events and incorporated substantial discussion of either emergency nurses or ED staff. Publications that were not specific to the emergency nursing experience or the ED response were excluded from review.

Overview of the literature

The aim of the discussion that follows is to describe the literature that informs what is known about emergency nursing and disaster in relation to the broad areas of focus and the methodologies used. A total of 32 publications were included for review. A summary of the articles that were reviewed can be found in Appendix 1. The body of literature that informs what is known about emergency nurses and disasters is divided into three broad areas of focus; *emergency nursing experience of disaster response* which describes publications that specifically discuss nursing in the ED during a disaster response, *ED response to disasters* which explores publications that describe the ED response to a disaster and *perceptions of disaster response* which describes publications that explore the perceptions of emergency nurses in relation to disaster response in the ED which incorporates literature related to other phases of disaster response such as preparation and recovery.

Emergency nursing experience of disaster response

There are very few studies that have been written exclusively about the experience of nursing in the ED during a disaster response over the past two decades (Collins 2001; Frank 2001; Yip 2002; Richardson *et al.* 2013; Lenehan & Hughes 2014). With the exception of the article by Richardson *et al.* (2013) that discusses earthquake response, all articles in this group focus on the response to terror attacks. All publications originate from developed countries including New Zealand, Northern Ireland and USA.

The earliest publication in the past two decades documents nurses experiences of the 1998 Omagh bombings in Northern Ireland (Collins 2001). The author, Collins is himself is a nurse therapist and the article is his personal account of the discussions he had with nurses who responded to the bombing. It is unclear what area the nurses specialise in, but the accounts of nurses working in the 'Casualty' department imply emergency nurses are the focus. The article describes the overwhelming nature of the event and the seemingly endless arrival of patients that resulted. The tragedy of the situation is evident through the death of a young baby who presented without its parents and the number of people killed who were

relatives of hospital staff. The article also focusses on the emotional impact on the nurses who participated in the event. This was demonstrated by emotions such as grief and sadness, avoidance behaviours and the development of Post Traumatic Stress Disorder (PTSD) (Collins 2001, p. 11).

Also reporting on the the experiences of emergency nurses who responded to terror attacks are two articles by Frank (2001) and Yip (2002) who discuss the response to the World Trade Centre attack in the USA in 2001. Yip (2002) is an emergency nurse from New York who was at home at the time of the World Trade Centre attack. The article is presented as a series of diary entries which chronicle the moment Yip learns that there has been an attack and her desire to get to the ED as soon as possible to help. Yip describes the hospital response including the types of patients she cared for, the work undertaken by ED staff and the atmosphere of the ED and New York at the time. Yip also describes how the ED became overstaffed as a result of volunteer nurses and doctors coming to help. In fact, although Yip (2002) is an employee of the hospital she implies she volunteered her services that day because there is no mention that she confirmed with her manager whether or not her prescence was required before she went to the ED. The determination of Yip to get to the ED was exemplified through hitching rides with passing motorists, among them the police and construction workers, because there were no other means to get to the hospital.

Threaded throughout Yip's article is the emotional effect associated with participation in the response which occurred over a few days. Yip describes a physical and emotional exhaustion after her first day of work. After her second day Yip (2002, p.12) describes her reaction when she returns home after her shift:

> *…for the dozens of family members I had to turn away. I cry for the innocent lives that were lost. I cry for my collegaue's cousin, the firefighters and police officers who died. I cry for the total devastation. The teams wont stop, and nothing eases the pain.*

From reading this and the words that follow it is evident that Yip is trying to make sense of this devastating experience. Another clear message throughout the article is the strong cameraderie among emergency staff and the strength of the

community who offer food and support to health care workers. The emotional impact of responding to this disaster is also documented by Frank (2001) who acknowledges the frustration that nurses feel at not being able to help people find their missing loved ones. The stories that nurses tell about the patients they remember highights the empathy nurses feel and the impression that patients leave with them long after the event. Frank (2001) also reports on the enormous amount of gratitude that emergency nurses feel through the coming together of the community who provide donations and praise for frontline responders. After the response the emotional impact is evident and demonstrated through the words of an emergency nurse who says;

> *We are all still in a somewhat state of shock, attempting to grasp the unreality of the situation while simultaneously attempting to move forward with our daily lives…because what else can we do? (Frank 2001, p.547).*

The article by Frank (2001) is a compilation of insights from emergency nurses including an account by Yip, who worked in different ED across New York and Washington following the attacks on 9/11. Throughout the article nurses describe the mobilistion of resources on notification of the attack, that ensured essential supplies and human resources were readily available for use in the response. Nurses describe the initial presentation of patients to the ED as a blur, with one nurse stating they didn't have time to be horrified, implying that although the injuries sustained by some patients were quite horrific, nurses were too busy to acknowledge this at the time. Nurses also describe the work they did and the types of patient presentations seen in the ED that day including burns, respiratory symptoms from the ash and debris, fractures and traumatic amputations. In line with discussion so far about other events the Frank (2001) article documents the willingness of emergency nurses to participate as well as the arrival of volunteers, off duty staff, retired staff and staff who were not employed at the hospital presenting to the ED to offer support.

Richardson *et al*. (2013, p. 190) discuss the experience of nurses who responded to the Cantebury earthquakes in New Zealand describe a 'coming together' and sense of community involvement as many nurses continued to work in the ED despite

potential loss such as damage to their homes. Nurses also describe the damage sustained to the hospital during the February event such as power outages, cracking to walls and ceiling, intermittent failure of emergency power generators and broken pipes whch caused flooding. In addition there was a partial collapse of the ceiling and entrance to the ED, and a fear that the entire building may collapse leading to the establishment of an outside triage area. Richardson *et al*. (2013) also describe volunteers from other parts of the hospital or staff who are off duty arriving to the ED to provide assisstance. Staff innovation and a patient centred approach is also evident throughout the article. One example being that because elevators were only working intermittently staff physically carried patients up stairwells to get them to other areas of the hospital such as the Intensive Care Unit.

An article by Lenehan and Hughes (2014) brings the focus back to terror events by describing the experiences of four emergency nurses who participated in the ED response to the 2013 Boston marathon bombings in the USA. Similarly to the article by Frank (2001) Lenehan and Hughes (2014) present experiences of emergency nurses who responded that day. Jay O'Reilly a nurse working at Brigham and Women's Hospital paints a picture of the initial moments of the response stating that within minutes 14 trauma bays were filled with patients. The immediate rush of patients and the controlled chaos is also described by other nurses in the article. Gretta Morris of Boston Medical Centre attributes this to the constant drills staff have been involved in prior to the disaster. It has also been reported in other litertaure that one of the reasons why the Boston marathon bombings was considered to be successful by many is because the city of Boston was prepared and Boston hospital staff had participated in disaster drills and training (Biddinger *et al.* 2013; Walls 2013; Lenehan & Hughes 2014; Nadworny *et al.* 2014). Also evident throughout the article is a 'can do' attitude, willingness to participate in the response and camraderie between ED staff.

ED response to disasters

This section explores publications written about the ED response to a disaster. Many of the articles refer to 'ED staff' and don't differentiate between different

staff specialties such as nurse or doctor. This is indicative of the multidisciplinary nature of the ED environment where staff work together as a team. Although this makes it unclear which profession is being discussed, it can be assumed that because nurses have an integral role in the day to day running of the ED the insights provided by these articles are also relevant to the nursing experience during a disaster response (Hodge & Robertson 1999; Mickelson *et al.* 1999; Mohammed *et al*. 2005; Wachira *et al*. 2014). Publications were included for review if they had significant discussion of the human experience specific to either emergency nurses or more generally ED staff. While there are many publications that describe the ED response to a disaster, most were excluded because they have minimal discussion of the human experience and focus more on response times, the types of injuries patients had sustained and how they were managed. Similarly to literature in the section above, most of the publications in this category are written about a response to a single event and originate from countries with well-developed health care systems.

Two articles in this section have a particular focus on emergency nurses (Amundson & Burkle 1995; Taylor *et al.* 2003). Amundson and Burkle (1995) describe their experience of working in the ED of St. Anthony's Hospital in Oklahoma City, USA following the bombing of the Murrah Federal building on the 19th April 1995. This article also focuses somewhat on how the authors felt by describing an initial feeling of shock as patients arrived to the ED. In concluding their article Amundson and Burkle (1995, p. 407) emphasise the emotional impact of participation in the response stating that staff experienced 'normal post-traumatic stress symptoms'. What these symptoms are, has not been elaborated on by the authors however, one of the authors does describe a profound sense of loss and grief. While the article does highlight the emotional impact participation in disaster response has on nurses, the authors also allude to a sense of camaraderie among staff as well as pride at being involved in the disaster response. Additionally Amundson and Burkle (1995) report that by being situated so close to the incident site, ED staff were able to save many people that would have died if medical help was further away. Amundson and Burkle (1995) also give insight into what is occurring inside the ED

during the response. This includes the initial impact of the bomb which was felt in the ED, the waves of patients arriving to the ED, the way the ED was set up to manage the onslaught of patients and the arrival of volunteers in the form of past colleagues to help with the response. Additionally the authors describe the type of injuries patients presented with, mostly lacerations, fractures, abrasions and acute stress reactions as well as the nursing management of the patients.

Also with a particular focus on the emergency nursing experience is an article by Taylor *et al*. (2003) that describes the first hand experience of nurses who were working at the Royal Darwin Hospital (RDH) ED which responded to the 2002 Bali bombing in Indonesia. Bali is a favourite destination for many Australian holiday makers and ultimatey 88 Australians lost their life in the bombing and approximately 54 patients (including non Australians) were transported by aircraft back to Australia for treatment (Tran *et al.* 2003). At 0730 on the morning of the 13th October, several hours after the attack, a man who had been injured by the bomb blast caught a plane to Darwin and presented to the RDH. At 0130 the following morning the ED received the first wave of patients from the attack (Taylor *et al*. 2003). The first part of the article outlines the implementation of the ED disaster plan. Because of the distance between Darwin and Bali there was a significant time lag between the initial notification and receiving patients therefore the ED staff had a unique oportunity with considerable time to set up the ED. The second part of the article describes the management of patients with particular focus on the types of patient presentations and the emotional reactions of ED staff. As with Amundson and Burkle (1995), Taylor *et al*. (2003) draw attention to the emotional effect of participation in disaster response highlighting symptoms of fatigue and insomnia that set in after the response. Also aligning with the literature previously discussed, Taylor *et al*. (2003) describe the sense of pride that is felt as a result of being involved in the disaster response.

Other articles in this section that discuss the ED response are more vague about the emergency nursing experience, but include substantial discussion about the experience of ED staff in general. Publications in this section pay particular attention to the timeline of events as they unfolded (Mickelson *et al*. 1999; Tham

2004; Behney *et al*. 2006; Timm & Reeves 2007; Tracy 2008; Linkous & Carter 2009; Koehler *et al*. 2014; Wachira *et al*. 2014), implementation of the disaster plan (Tham 2004; Behney *et al*. 2006; Timm & Reeves 2007; Koehler *et al*. 2014; Wachira *et al*. 2014), management of patients (Farquharson & Baguley 2003; Tham 2004; Little *et al*. 2012a; Wachira *et al*. 2013; Koehler *et al*. 2014), the number and types of patient presentations to the ED (Mickelson *et al*. 2009; Farquharson & Baguley 2003; Tham 2004; Behney *et al*. 2006; Timm & Reeves 2007; Tracy 2008; Little *et al*. 2012a; Koehler *et al*. 2014; Wachira *et al*. 2014), the impact on the ED space (Farquharson & Baguley 2003), lessons learned (Mickelson *et al*. 1999; Behney *et al*. 2006; Timm & Reeves 2007; Tracy 2008; Little *et al*. 2012a; Koehler *et al*. 2014) and recommendations for future practice (Timm & Reeves 2007).

Perceptions of disaster response

All of the articles presented in the two previous categories relate directly to the experience of responding to a disaster in the ED. Articles in this category focus specifically on emergency nurses' perceptions of disaster ranging from preparedness through to recovery. Publications were excluded if other specialties or professions were included in the sample. The broad areas of focus within these publications include preparedness for and knowledge of disaster response (French *et al*. 2002; Considine & Mitchell 2008; Mitchell *et al.* 2011; Whetzel *et al.* 2011; Seyedin *et al.* 2015; Alzharani & Kryatsis 2016), disaster education and training (Duong 2009; Hammad *et al.* 2010; Ranse *et al.* 2013), motivation to respond to a disaster (Arbon *et al.* 2013a; Arbon *et al.* 2013b; Bell *et al.* 2014) and the impact of disaster response (Battles 2007). There are also two literature reviews that have been undertaken to explore aspects of emergency nurses and disaster response (Hammad *et al.* 2012; O'Connor & Hammad 2016). The majority of the publications in this section refer to emergency nurses' perceptions of hypothetical events with only two articles (French *et al.* 2002; Battles 2007) retrospectively exploring nurses' perceptions following actual participation in disaster response.

The majority of publications that explore nurses' perceptions do so in relation to nurses' preparedness for disaster response (French *et al*. 2002; Considine & Mitchell

2008; Mitchell *et al.* 2011; Whetzel *et al.* 2011; Seyedin *et al.* 2015; Alzharani & Kryatsis 2016). French *et al*. (2002) compare hospital disaster plans with nurses' perceptions of their needs and concerns following their participation in the response to Hurricane Floyd in 1999. The authors conclude that nurses have valid concerns for personal safety, family safety, and provision of basic needs, wage, adequate leadership and pet care during disaster response. This study also highlighted that family commitments conflicted with professional obligations and nurses lost their jobs when they chose to stay with their families rather than go to work (French *et al*. 2002).

Considine and Mitchell (2008) used a survey to explore the preparedness of 64 emergency nurses working in one ED in Victoria, Australia about their perceptions of preparedness for chemical, biological and radiological (CBR) events. The study concluded that while emergency nurses were generally positive about participating in CBR events deficits in training and ability of staff to wear PPE were emphasised. Considine and Mitchell (2008) also highlight that CBR response adds a layer of complexity to an already challenging and diverse scope of emergency nursing practice and therefore CBR training opportunities should be maximised, appropriately resourced and interdisciplinary.

Hammad *et al*. (2010) explored a slightly different perspective of preparedness through knowledge, awareness, previous disaster response experience and understanding of nursing roles in disaster response. Hammad *et al*. (2010) also surveyed 194 emergency nurses in South Australia and found that participants have limited previous disaster response experience through actual events or simulated exercises. Furthermore, Hammad *et al.* (2010) found that existing disaster education and training opportunities have limited relevance to emergency nurses and participants in the study have a low level of disaster knowledge. Hammad *et al*. (2010) concludes by emphasising a need for appropriate disaster education and training for emergency nurses.

In the USA Whetzel *et al*. (2011) surveyed 177 emergency nurses attending an emergency care conference about their perceptions of individual and facility

preparedness for disaster response. The study identified that nurses have a limited awareness of their susceptibility to disaster and their role in disaster believing that although a disaster could happen, it won't happen to them. Additionally, the study identified limitations in nurses' disaster knowledge and reports that a majority of the respondents have concerns about caring for critically ill paediatric patients. These findings led the authors to recommend future research directions to focus on determining appropriate content for disaster education for emergency nurses.

Also supporting limited ability of emergency nurses' to receive appropriate disaster information is a study by Seyedin *et al*. (2015) who surveyed 110 emergency nurses in Iran about their knowledge and training needs with regards to disaster response. The authors concluded that emergency nurses have a lack of knowledge and blame system wide errors for this such as poor dissemination of information to nurses. This leads the authors to support the need for disaster education and training to be more readily available for emergency nurses and additionally highlight the need to implement a formal disaster curriculum.

Alzharani and Kyratsis (2016) also used a survey tool to explore disaster preparedness of 106 emergency nurses in Saudi Arabia. The study highlighted that although nurses have a low level of knowledge they have a good understanding of their role in disaster response and supports the need for emergency nurses to develop their disaster awareness through education and training with a focus on vicarious learning.

A smaller group of publications focuses on emergency nurses' perceptions of disaster education and training (Duong 2009; Hammad *et al.* 2010; Ranse *et al.* 2013). In 2009 Duong[1] explored disaster knowledge and understanding of emergency nurses in the state of South Australia with a particular focus on education and training. This mixed method research design utilised a self-designed survey tool to explore nurses' perception of their knowledge, experience, preparedness and training for disaster. The study, which surveyed 152 nurses

[1] This is a publication by the author as Duong was the previous surname of the author (Hammad)

working in metropolitan EDs in South Australia, concluded that this group of nurses had limited disaster awareness on a background of limited disaster response experience and appropriate disaster education. These findings lead Duong to recommend the need for further research into exploring the most appropriate ways to prepare emergency nurses for disaster.

The findings of the Duong (2009) study related to limited training opportunities are supported in an article written a few years later by Ranse *et al*. (2013). The article by Ranse *et al*. (2013) is a review of the disaster education and training opportunities that are currently available to nurses in Australia through post graduate nursing programs and hospital in service education. Ranse *et al*. (2013) point out that while most programs have some disaster content, it is minimal, varied between organisations and often not appropriate for the needs of the nurses. This leads Ranse *et al*. (2013) to summarise that nurses are therefore pushed to seek out their own disaster education, sometimes at their own considerable expense, through courses such as the Australasian Inter-service Management Systems (AIMS) and Major Incident Medical Management and Support (MIMMS) and training offered by organisations such as St John Ambulance Australia, the Australian Red Cross, and the Australian Defence Force.

A small portion of publications explore perceptions of emergency nurses in relation to their motivation to respond to a disaster (Arbon *et al*. 2013a; Arbon *et al*. 2013b; Bell *et al*. 2014). In 2013 Arbon *et al*. (2013a & 2013b) report on the findings of their study which explores Australian emergency nurses' willingness to respond to a healthcare disaster. The study utilises a mixed method approach using surveys, focus groups and interviews to gain understanding of the factors that influence Australian emergency nurses' willingness to attend work during a disaster. The study included 41 participants across four EDs and concluded that the decision making around attending work in a disaster takes in a number of complex personal, work related and professional factors that can change depending on the context of the disaster, preparedness of the work environment and personal responsibilities (Arbon *et al*. 2013a & 2013b).While the Arbon *et al*. (2013a & 2013b) study explores motivation of emergency nurses to respond to all types of events resulting in a

healthcare disaster, a study by Bell *et al*. (2014) reports more specifically on the likelihood of emergency nurses in the USA to report to work during an Avian influenza outbreak. The study which surveyed 297 emergency nurses found that the majority of nurses (84%) would report to work. The likelihood of reporting to work differed by education level, nurses' Avian influenza information sources, and nurses who had family living with them.

Only one study was found that explores the impact of disaster events on emergency nurses. Battles (2007) attempts to explore the prevalence of PTSD in emergency nurses who had worked during Hurricane Katrina in the USA in 2005. While the research concludes that 20% of nurses who were surveyed experienced symptoms of PTSD the study itself was limited to five participants from one hospital making it difficult to generalise the results to the wider emergency nursing community.

Two literature reviews, both originating from Australia have been conducted about emergency nurses and disaster response (Hammad *et al.* 2012; O'Connor & Hammad 2016). Hammad *et al*. (2012) specifically explored literature relating to the experience of nursing in the ED during a disaster. The review of literature describes a systematic approach used to identify 18 articles that all discuss the experience of nursing in the ED during a disaster. Five themes emerged from the review: (1) What nurses do during a disaster response; (2) How nurses feel during a disaster response; (3) Preparedness of nurses for disaster response in the ED; (4) Barriers to working in the ED during a disaster; and (5) Changes that occur during a disaster. The review highlights gaps in knowledge related to preparedness of emergency nurses for disaster and changes that occur in the ED during a disaster.

The article by O'Connor and Hammad (2016) explores the literature about emergency nurses' perceptions specific to terror attacks. A thematic analysis led to seven themes; training, disaster plans, anticipating the arrival of patients, willingness to respond, safety, caring for people affected by terror attack and psychological effect. The review concludes that more focus needs to be placed on preparedness of emergency nurses in order to mitigate negative long-term effects of responding to terror attacks, in particular CBRN events.

Methodology

A narrative approach dominates the literature that informs what is currently known about emergency nurses and disasters. For this reason a critical appraisal of the literature as such was not undertaken, rather, the aim of this chapter has been to describe what is currently understood about the topic. The majority (*n*= 16) of publications use a story telling approach to describe the experience of responding to a disaster in the ED (Amundson & Burkle 1995; Mickelson *et al.* 1999; Collins 2001; Frank 2001; Yip 2002; Farquharson & Baguley 2003; Taylor *et al*. 2003; Tham 2004; Behney *et al*. 2006; Timm & Reeves 2007; Tracy 2008; Linkous & Carter 2009; Richardson *et al*. 2013; Lenehan & Hughes 2013; Koehler *et al*. 2014; Wachira *et al*. 2014). All of the publications focus on a response to a single event and provide insight into what it feels like to respond, what types of patients present and how they were managed. The majority (*n*= 9) of these publications focus on terror attacks and have originated from countries that have well developed health care systems (Amundson & Burkle 1995; Collins 2001; Frank 2001; Yip 2002; Taylor *et al*. 2003; Linkous & Carter 2009; Lenehan & Hughes 2013; Koehler *et al*. 2014; Wachira *et al*. 2014).

Approximately one third of the publications (*n*= 13) utilised descriptive research designs (French *et al*. 2002; Battles 2007; Considine & Mitchell 2008; Duong 2009; Hammad *et al.* 2010; Mitchell *et al.* 2011; Whetzel *et al.* 2011; Arbon *et al.* 2013a & 2013b; Ranse *et al.* 2013; bell *et al.* 2014; Seyedin *et al.* 2015; Alzharani & Kryatsis 2016). All of these publications use survey tools (Battles 2007; Considine & Mitchell 2008; Duong 2009; Hammad *et al.* 2010; Mitchell *et al.* 2011; Whetzel *et al.* 2011; Arbon *et al.* 2013a & 2013b; Ranse *et al.* 2013; Bell *et al.* 2014; Seyedin *et al.* 2015; Alharani & Kryatsis 2016) or focus groups (French *et al*. 2002; Arbon *et al.* 2013a & 2013b). The majority (*n*= 11) of these publications focused on hypothetical events that hadn't yet occurred and it is unclear if nurses' who participated in these studies have previously been involved in disaster response. These publications largely provide insight into emergency nurses' perceptions of their preparedness and knowledge about disaster response, and commonly conclude that there are limitations in disaster education for emergency nurses.

Discussion of the literature

The discussion that follows is divided into three distinct sections: *disaster preparedness, disaster response* and *post disaster* reflecting three major themes that emerged from the review of literature.

Disaster preparedness

The literature strongly emphasises emergency nurses' lack of preparedness for disaster response (Considine & Mitchell 2008; Duong 2009; Mitchell *et al*. 2012; Whetzel *et al*. 2011). Factors supporting a low level of preparedness are mostly related to deficits in disaster education and training (Considine & Mitchell 2008; Duong 2009; Mitchell *et al*. 2012; Whetzel *et al*. 2011; Seyedin *et al.* 2015; Alzharani & Kyratsis 2016). The importance of disaster education and training as a means to enhance confidence and disaster preparednessdominates the literature linking a perceived low preparedness and diminished confidence in emergency nurses to limitations in disaster education and training (Considine & Mitchell 2008; Duong 2009; Mitchell *et al*. 2012; Whetzel *et al*. 2011). Based on the findings of their study in combination with recent literature on the topic Whetzel *et al*. (2011) recommend the need for additional training to enhance perceptions of preparedness for CBRN events. Duong (2009) also supports the need for further research to determine the most appropriate disaster education and training. Similarly Considine and Mitchell (2008) support the need for regular interdisciplinary training opportunities for CBR response and Alzharani and Kyratsis (2016, p.749) recommend experiential learning as an appropriate way to increase disaster awareness among nurses with limited experience. The call for further education and training is not limited to research that discusses hypothetical events. More focused training is also recommended by Koehler *et al*. (2012, p. 5-6) who state that all training should have the following characteristics: be audience specific, competency based, have clearly defined objectives, short-term learning evaluation, long-term learning acquisition and be ongoing.

While there is a general consensus that emergency nurses need regular access to appropriate disaster education and training opportunities, the mode, frequency and

content is a source of much debate. Some authors have attempted to quantify what content is appropriate. However, this is largely based on the results of studies that explore nurses' perceptions of preparedness for as yet hypothetical events (Considine & Mitchell 2008; Duong 2009; Whetzel *et al*. 2011). Although the unpredictability of disasters makes it difficult to evaluate the effectiveness of existing disaster education and training, current dialogue on this topic highlights the need for further exploration into the role and relevance of disaster education and training to better prepare emergency nurses for disaster response.

Authors who describe their experience with disaster response credit effective plans and preparedness activities such as disaster drills for a smooth, well-rehearsed response. A recommendation to use disaster drills to better prepare staff is supported by Wachira *et al*. (2014) who suggests a need for comprehensive drills to test plans and prepare institutions and staff for disaster response. In their discussion of an ED response to the 2007 Virginia Tech shootings Linkous and Carter (2009) state that drills previously conducted in the ED helped staff to navigate through the response. This sentiment is further supported by other authors who described the Boston marathon bombing response (Lenehan & Hughes 2014). A nurse involved in 9/11 reported that although there may be some deviation from the plan, having a plan in place helped with the decision making process (Frank 2011, p. 546). Conversely, some authors report that plans did not always stand up in a disaster situation. Taylor *et al*. (2003) reported that the disaster plan they used did not cover the unique aspects of the event. French *et al*. (2002) also reported that written policies for disaster response were woefully inadequate to deal with the valid concerns and mass chaos of a level 5 hurricane. This further highlights that regular disaster drills provide the opportunity for plans to be tweaked and updated so that they are relevant for an actual response.

Other factors which are reported to have a negative impact on nurses' preparedness for disaster response include minimal disaster response experience (Duong 2009), decreased confidence among emergency nurses (Duong 2009; Whetzel *et al*. 2011), limited awareness among nurses of existing institutional plans (Duong 2009; Whetzel *et al*. 2011) and poor general disaster knowledge among

emergency nurses (Mitchell *et al*. 2012). While there is a perception that factors such as limitations in disaster education, disaster response experience, awareness of pre-existing facility plans and knowledge of disasters diminishes confidence or preparedness to respond to a disaster, there is no clear evidence that these factors have a negative effect on nurses when they are exposed to an actual disaster situation later on. For example Whetzel *et al*. (2011) found that previous experience with disaster response actually creates a perception among nurses that they are better prepared for future disaster response. Evidence from actual events also suggests that when these factors do exist such as when nurses have previously been involved in disaster response or when they have a broader awareness of disaster response and existing institutional plans confidence in nurses is enhanced. Literature which reported on responses to Boston Marathon running (Lenehan & Hughes 2014), Christchurch earthquakes (Richardson *et al*. 2013) and Virginia Tech shootings (Linkous & Carter 2009) highlighted that previous disaster response experience and drills enhanced staff confidence during the response. Furthermore, Wachira *et al*. (2014, p. 541) suggests that lessons learned from previous events should inform hospital plans and training of staff.

Disaster response

A sense of duty is demonstrated by emergency nurses through their motivation to participate in disaster response. Following terror attacks, nurses who were not at work felt compelled to go to work and help regardless of what they were doing at the time (Frank 2001). Frank (2001) describes the lengths nurses went to, to get to work following the World Trade Centre attacks such as using their nursing credentials to pass through police barricades and hitch lifts, demanding that any available person or agency care for their children while they respond and breaking traffic laws. Other nurses who have responded to terror attacks are reported to have gone to similar lengths. On discovering the attack on the World Trade Centre in 2001 Yip (2002, p. 10) stated ‘I need to get to the ER’. Another nurse responding to the Boston marathon bombing said: ‘I wanted to be there, I needed to be there. Everyone did, it felt better to be at work’ (Lenehan & Hughes 2014, p. 22).

A willingness of emergency nurses to respond to healthcare disaster in general was reported by Arbon *et al*. (2013a & 2013b) who specifically set out to explore willingness of nurses. The Arbon *et al*. (2013a & 2013b) study found that emergency nurses are generally willing to attend work during disaster, but that the decision making process in doing so considers the type of disaster, demographic, family and workplace factors. Factors which were a barrier to nurses' willingness included the type of disaster event and perceived preparedness of workplace and colleagues (Arbon et al. 2013b). Although specific to CBR events, Considine and Mitchell (2008) explored nurses' motivation to respond and found that a majority of participants in their study were willing to respond to a CBR event. Both of these studies, although based on hypothetical events, support the findings in the response to actual events that emergency nurses are generally motivated to participate in disaster response. Bell *et al*. (2014) also found a high level of motivation of emergency nurses to respond during Avian influenza. A sense of duty was also evidenced through reports of nurses continuing to work through the response despite potential ill effects to themselves. Also displaying little regard for themselves nurses in New Zealand reportedly continued to work despite significant damage to their homes (Richardson *et al*. 2013, p. 190).

A motivation to respond was also demonstrated by nurses who couldn't get to their usual place of work presenting to the nearest ED to offer their help. Frank (2001) reported this in the ED during 9/11 stating that often nurses were unable to get to their own place of work. In their account of the ED response to the 1995 Oklahoma bombing Amundson and Burkle (1995, p. 404) also reported that emergency nurses past and present walked in behind every patient, something they found comforting as their abilities and experiences were known to them. In relation to the 9/11 response Yip (2002) remarked that doctors and nurses she hadn't seen for years came to the ED to help. As the ED becomes overwhelmed, staff from other parts of the hospital are co-opted to bolster the response (Tracy 2008; Lenehan & Hughes 2014). Although high motivation to respond is reported and demonstrated across the literature, the effect of high numbers of nurses presenting to one ED to help has

not been adequately assessed in the literature in terms of confirming their qualifications and delegating workload.

Also evident from the literature is that once a disaster has been identified as such, resources materialise almost immediately (Amundson & Burkle 1995; Frank 2001; Timm & Reeves 2007). This is relevant in the context of disasters occurring in developed countries. This may be in response to the activation of the hospital disaster plan or it may be unsolicited supplies such as food and beverages from members of the community (Amundson & Burkle 1995; Yip 2002). A continued supply of human and material resources to support the response is dependent on the scale of the disaster and the impact on the surrounding community. In compound disasters such as earthquakes, where infrastructure such as lines of communication and roads are damaged or disrupted (ALSG 2014, p.7) it is difficult to transport resources to the hospital. In simple disasters where infrastructure remains intact (ALSG 2014, p.7), it is relatively easy to continue the supply of resources.

Collegiality among ED staff, not just emergency nurses, during disaster response is reported in a number of ways through working in teams to deliver patient care, and supporting each other throughout the response and after. ED staff working in teams was described by Wachira *et al*. (2014, p. 540) who reported that nurses and doctors paired up to work in teams to deliver treatment to patients. In general there is a sense of pride in the collegiality and teamwork which emerged during and after the response (Lenehan & Hughes 2014; Taylor *et al*. 2003). This teamwork and collegiality resulted in a sense of camaraderie which Yip (2002) found to be uplifting. A nurse who responded to 9/11 reported that although it was a 'huge tragedy', it was great because all the staff worked together (Frank 2001, p. 541). Another nurse involved in 9/11 reported that the response was a 'tremendous collaborative practice' and that every health care provider was ready, coordinated and working together (Frank 2001, p. 546). Taylor *et al*. (2003) also reported that the camaraderie among staff in the RDH response to the Bali bombings was tangible and further reports that it was an honour and privilege to be a part of an incredible team. A nurse who responded to the Boston marathon bombing reported: 'I was so

impressed by my colleagues. It wasn't one person, it was everyone' (Lenehan & Hughes 2014, p. 22). Collegiality extends beyond nurses to include all staff working who regularly work in the ED. This highlights that emergency nurses do not work in silos and supports the inclusion of other literature in the review which doesn't explicitly focus the discussion on emergency nurses. While this does emphasise the need for future research and preparedness activities to adopt a more multidisciplinary approach, a deeper understanding of the nursing perspective is still relevant to guide future preparedness.

In events that result in large numbers of injured people, the proximity of the ED to the event also has implications for the response. Close proximity of the hospital to an event makes the ED more accessible for people, therefore making it possible for those that are able to leave the scene to self-present to the nearest ED (Amundson & Burkle 1995). This often occurs before a coordinated pre-hospital response has been implemented. In addition, emergency services may choose to 'scoop and run'; or transport more than one patient at a time in order to relay patients to definitive care sooner (Frank 2001; Behney *et al.* 2006). The result can be a high volume of predominately walking patients in a short period of time, many of whom are not critically injured and have not received any treatment or been through a triaging process (Collins 2001; Frank 2001; Wachira *et al*. 2014). For Amundson and Burkle (1995, p. 401) the positive connotations of this were that they were able to save many people whose trauma was so severe that minutes were all they had. Following the Aurora cinema shootings Koehler (2012) reported that police drove casualties directly to the ED and credits this action and the quick mobilisation of injured people to the ED for lowered mortality following the event.

Conversely, where the ED is located some distance from the event a time lag between notification and reception of patients allows a more coordinated ED response. Following the 2002 Bali bombings in Indonesia patients were flown to Darwin, Australia for treatment. Where time and distance are a factor, those presenting to the ED have often already received some initial medical treatment and been through the process of triage (Taylor *et al*. 2003). In this context the pre

triaging of patients may mean that patients are distributed evenly to a range of hospitals which may also lessen the impact and chaotic nature of the event.

Following events which result in mass casualties, the literature describes patients presenting to the ED in waves (Amundson & Burkle 1995; Frank 2001; Yip 2002; Timm & Reeves 2007). The first wave, particularly when the hospital is in close proximity to the incident, is generally the walking wounded (Amundson & Burkle 1995). Subsequent waves are characterised often by health workers and volunteers seeking medical treatment once the initial response phase has died down (Frank 2001). There are also reports of nurses preparing for subsequent waves of patients who never arrive because they haven't survived (Amundson & Burkle 1995; Frank 2001; Yip 2002). This is reported to be somewhat traumatic for nurses as it leads to the realisation that there were many who did not survive the event (Frank 2001).

In relation to their patients, and those that have been directly impacted by the disaster, nurses report empathy, and a sense of sorrow or helplessness (Amundson & Burkle 1995; Frank 2001; Yip 2002; Taylor *et al*. 2003). This is also observed through the reports of how the stories relayed by the patients, families looking for loved ones, rescuers and colleagues strike a deep chord with nurses and remain in their memories long after the response has finished (Amundson & Burkle 1995; Mickelson *et al.* 1999; Collins 2001; Frank 2001; Yip 2002). Additionally, caring for burns victims can be particularly challenging in a disaster. A nurse who responded to 9/11 states 'we didn't have time to be horrified' (Frank 2001, p. 539), suggesting that the injuries sustained by a burns victim were not only horrific, but left a lasting memory. Similarly ED staff describe the lasting impression associated with the sight and smell associated with severe burn injuries (Taylor *et al.* 2003).

Discussions in the literature imply changes occur in the ED as a result of disaster response. The general atmosphere of the ED may change during a disaster. The ED can become an emotionally laden place. Although crowded and busy, the ED during a disaster has been described as quiet and calm but with a sense of urgency (Amundson & Burkle 1995; Yip 2002). According to Amundson and Burkle (1995, p. 405) the sounds in the ED during a disaster response were those of controlled,

urgent requests from the caregivers for tests, medications, xrays and supplies. The physical space in which nurses are used to working on a day to day basis may also change dramatically during a disaster. This is commonly described in earthquake disasters (Richardson *et al*. 2013) or those close to a bombing event where damage causes shattered windows, disruption to electricity, structural and equipment damage (Amundson & Burkle 1995). Despite the potentially unsafe environment and continued aftershocks, it is reported that nurses continue to work (Richardson *et al*. 2013). In some instances complete or partial evacuation from the ED was necessary for the continued management of patients (Richardson *et al*. 2013). The work space may also suddenly become very crowded with people (Behney *et al*. 2006; Timm & Reeves 2007; Koehler *et al*. 2012; Richardson *et al*. 2013). The usual chit chat of staff and patients subsides (Amundson & Burkle 1995; Yip 2002), the physical environment may become damaged (Richardson *et al*. 2013) or essential and usual services become unavailable (Frank 2001; Richardson *et al*. 2013).

A strategy which may be used to manage an influx of patients is to create separate areas away from the ED to manage patients. One example of this is an initial triage area (Amundson & Burkle 1995; Frank 2001; Tham 2004; Wachira *et al.* 2014). From the outside triage point patients may be directed into the ED or to satellite areas in other parts of the hospital (Frank 2001) such as straight to the operating theatre, morgue or an observational area to manage the walking wounded (Mickelson *et al.* 1999; Taylor *et al*. 2003; Behney *et al*. 2006). Another example used when managing patients that have potentially or definitely been contaminated is to set up a decontamination unit outside the ED (Timm & Reeves 2007). These satellite areas remain part of the ED response and may be staffed by ED staff including nurses (Timm & Reeves 2007). As they are used to working in the ED on a daily basis, redeployment to one of these areas means that it is likely that nurses are working in an unfamiliar environment.

Post disaster

Following participation in disaster response nurses describe a feeling of pride in what they have achieved through being part of the response. A nurse who worked

during 9/11 stated:

> *Nothing prepares you for something like this but I am so proud to be a nurse. From starting an IV to giving a woman a hug made me feel good, knowing I could give of myself in some way to those who have suffered such a loss (Frank, 2001 p. 542).*

Yip (2002, p. 14) who was involved in the same event also indicates that participation in the response had a profound effect on her. The sense of pride that nurses feel following participation in disaster response extends beyond themselves to their colleagues and others who are involved in the response. This sentiment is echoed by Taylor *et al*. (2003) where at the end of her article she describes a pride in herself, her colleagues and her country.

Boosting positive feelings directly after a disaster response, is the support that emergency nurses received from the wider emergency nursing community. Following their response to the Oklahoma bombing Amundson and Burkle (1995) describe receiving a fax from staff at another ED in San Francisco which they say they read with moist eyes, passed from room to room and hung on the wall for all to see. In the wake of their response to the Bali bombing Taylor *et al*. (2003) described receiving messages from medical and nursing colleagues in Canada, Hong Kong, Scotland and USA saying they were incredibly moved by the messages of support. Mickelson *et al*. (1999) also decribe feeling touched after receiving a handwritten letter of support from nurses who had been involved in the Oklahoma City bombing. While concluding their article Frank (2001) includes messages of support sent to nurses following 9/11 from nursing colleagues across the world. This outpouring of support demonstrates the collegial nature of the emergency nursing community and highlights how well this support is received by nurses folllwing a disaster response. Support is also provided to ED staff by the wider community. Frank (2001) and Yip (2001) both describe how the wider community provided food and beverages for hospital staff during and after the event.

The literature reports that although the effect of participation in disaster response is in many ways positive, there are also negative outcomes. Directly after the response Taylor *et al*. (2003) reported that staff were in tears and hugging each

other. Upon returning home from a shift in the ED following the 2001 World Trade Centre attack, Yip (2002, p. 12) reports that she sat on the side of her bath tub and cried:

> *I cried for the dozens of family members I had to turn away. I cry for the innocent lives that were lost. I cry for my colleagues cousin, the fire fighters and police officers who died. I cry for the total devastation. The tears wont stop and nothing eases the pain.*

After the response to the Bali bombing Taylor *et al*. (2003) reported that staff were fragile and on an emotional roller coaster. Amundson and Burkle (1995) also reported that nurses feel and perceive things differently after participation in a disaster event. In his account of the Omagh bombings in Ireland Collins (2001) reports that after participation in the response nurses felt numb, sadness, dread, horror, fear, rage, shame and experienced depression, sleeplessness, anxiety and flashbacks. In the longer term Collins (2001) reports that some nurses experienced depressions, suicidal tendencies, panic attacks and over reliance on alcohol while others experienced PTSD such as intrusive thoughts, avoidance behaviours and increased arousal.

Participation in disaster response appears to be etched in nurses' minds for a long time after the event. In Lenehan and Hughes' (2014, p. 21) account of the Boston marathon bombing one of the nurses said that she would never forget that day or the way that everyone rose to the occasion. A nurse who responded to 9/11 reported that she will never forget what she saw (Frank 2011, p. 542). This was echoed by Amundson and Burkle (1995) who described the sight of patients arriving to the ED as a sight which will never be forgotten. Although it is evident that nurses experience a psychological impact as a result of their participation in disaster response, there is a significant paucity of literature that specifically explores the post disaster response phase and only one publication was found that specifically explores the psychological impact that participation in disaster response has on emergency nurses (Battles 2007).

Gaps in knowledge

The review of literature leads to three obvious gaps in our current understanding of emergency nursing and disasters. These gaps relate to the type of literature that informs what is known about the topic, a perception that emergency nurses are underprepared for disaster response and the paucity of research about the post disaster phase. These knowledge deficits are discussed in greater detail below.

Type of literature

Much of the literature that informs what is known about nursing in the ED during a disaster response is narrative accounts of the experience. These are either written from the perspective of an emergency nurse, or nurses, who describe their experience of responding to a disaster event (Amundson & Burkle 1995; Collins 2001; Frank 2001; Yip 2002; Taylor *et al.* 2003; Richardson e*t al.* 2013; Lenehan & Hughes 2014) or it is written from the perspective of the whole of ED response to a disaster (Mickelson *et al.* 1999; Farquharson & Baguley 2003; Tham 2004; Behney *et al.* 2006; Timm & Reeves 2007; Tracy 2008; Little *et al.* 2012a; Koehler *et al.* 2014; Wachira *et al.* 2014). There are few studies that have applied more structured research processes to understanding the role and experience of nursing in the ED during an actual disaster response. Research that does prescribe a more structured approach to understanding the role and experience of emergency nurses across the disaster continuum is focused on nurses' perceptions of disasters in relation to preparedness, knowledge, training and motivation to respond (French *et al*. 2002; Battles 2007; Considine & Mitchell 2008; Duong 2009; Hammad *et al.* 2010; Mitchell *et al.* 2011; Whetzel *et al.* 2011; Hammad *et al.* 2012; Arbon *et al.* 2013a; Arbon *et al.* 2013b; Ranse *et al.* 2013; Bell *et al.* 2014; Seyedin *et al.* 2015; Alzharani & Kryatsis 2016; O'Connor & Hammad 2016). The majority of these studies explore nurses' perceptions to hypothetical situations thus highlighting a significant gap in our understanding related to actual events. This gap has been bridged somewhat by the narrative accounts of the experience discussed above, however their lack of structure and that they are often specific to an individual or facility makes it very difficult to draw generalisable conclusions. There is therefore a need to produce more robust research about the nursing experience in disaster response.

Also of note is that the majority of the literature which informs what is currently known about the emergency nursing and disasters hails largely from developed countries with well-established health care systems. This is significant given that the majority of the world's disasters occur in Asia, in countries with less well established health care systems (Guha-Sapir *et al.* 2014). Despite the differences between the health care systems in developed versus developing countries, many lessons could be learned from the experiences of nurses who have repeated exposure to disaster response. This emphasises another gap in our current understanding and the need for a more global approach to sharing information and learning from past events.

Another point that stands out with regards to the type of literature that reports on emergency nursing and disasters is that the majority of publications discuss the response to a single event, such as a bombing or an earthquake. This identifies a need for research which explores the collective experience across different disaster types.

Finally, it was pointed out at the start of this chapter that nursing related disaster literature is roughly 75% less than literature written from a medical or broader health perspective. This is disproportionate when considered alongside the fact that nurses make up the largest health workforce group in the ED and not only play a vital role in the day to day running of the ED but are actively involved in disaster response. Nurses therefore need to have a more prominent voice within the disaster literature. Additionally, further research that explores the nursing experience is beneficial to enhance current understanding of nurses' experience with disaster response and to inform future policy and practice. This highlights a need to add to the existing body of nursing research about disasters.

Lack of preparedness

One of the stronger themes to emerge from the literature was a perception that emergency nurses are under prepared for disaster response (Considine & Mitchell 2008; Duong 2009; Mitchell *et al*. 2012; Whetzel *et al*. 2011). Lack of preparedness is reportedly related to deficits in disaster education and training (Considine & Mitchell 2008; Duong 2009; Mitchell *et al*. 2012; Whetzel *et al*. 2011), minimal

disaster response experience (Duong 2009), decreased confidence among emergency nurses (Duong 2009; Whetzel *et al*. 2011), limited awareness among nurses of existing institutional plans (Duong 2009; Whetzel *et al*. 2011) and poor general disaster knowledge among emergency nurses (Mitchell *et al*. 2012). This has led many authors to surmise that emergency nurses require more education and training, yet there remains much debate on what mode, frequency and content is required. This raises two points. Firstly, much of the literature that reports a low level of preparedness emerges from the research that is based on perceptions of disaster response rather than actual disaster response experience. It is therefore unclear whether this is a perception of nurses who have participated in disaster response. The second point that this raises is that the need for further education might be negated in light of the fact that nurses seem to get on with the job and do not require extraordinary skills or knowledge. This cannot be known for sure without a more thorough exploration into nurses' preparedness for actual disaster response and therefore highlights that we don't yet possess enough insight into the nursing experience to determine what the educational needs of emergency nurses are.

Another theme that emerges from the literature which represents a gap in knowledge relates to the changes that occur in the ED as a result of disaster response. The literature reports on changes to the ED space associated with an influx of people and an inability to manage the surge of patients within the confines of the existing ED. Changes to the ED also relates to structural changes and disruption to services and supplies caused by the actual event. Furthermore, in order to manage large volumes of patients, nurses may be required to work in satellite areas such as decontamination tents and outside triage. It is clear that these changes require nurses to work in unfamiliar environments however, what is not clear from the literature is how this impacts nurses.

Another feature of the reviewed literature is that the bulk of it focuses on terror attacks and sudden events (Amundson & Burkle 1995; Mickelson e*t al.* 1999; Collins 2001; Frank 2001; Yip 2002; Taylor *et al.* 2003; Behney *et al.* 2006; Linkous & Carter 2009; Little *et al.* 2012a; Richardson *et al.* 2013; Koehler *et al.* 2014; Lenehan &

Hughes 2014; Koehler 2014; Wachira *et al.* 2014). There are fewer articles that focus on slow onset disasters such as pandemics, droughts or heatwaves and the majority of these are written from a hypothetical perspective (French *et al.* 2002; Farquharson & Baguley 2003; Tham 2004; Battles 2007; Considine & Mitchell 2008; Mitchell *et al.* 2011; Bell *et al.* 2014). This could be because the rate of climatological disasters which are generally slow onset are reportedly decreasing (CRED 2014). While events such as heatwaves may be decreasing, the impact on the ED when they do occur is measured by a significant increase in patient presentations (Knowlton *et al.* 2009; Mayner *et al.* 2012; Toloo *et al.* 2014; Zhang *et al.* 2015). A more balanced view of nurses' experiences responding to different disasters may help to identify commonalities that could better inform the preparedness of emergency nurses for a range of disasters.

Paucity of research about the post disaster phase

A finding that emerged from the review of the literature was that emergency nurses who participate in disaster response reportedly experience symptoms of PTSD and burnout. The psychological effects on nurses were demonstrated in a number of ways that included but weren't limited to anxiety, sleep disturbance, intrusive thoughts and restlessness (Amundson & Burkle 1995; Collins 2001; Taylor *et al*. 2003; Battles 2007). Only one article was found that specifically explored the post disaster phase highlighting the need for further research that explores the psychological impacts of disaster response. It is unclear if the discussions in the literature relate to actual diagnosis of PTSD or if it is a perception based on the symptoms nurses experience after participation in disaster response.

The literature also suggests that disasters challenge our awareness or understanding of our everyday world. This is expressed through the belief that there is a need to prepare nurses for disaster response and that emergency nurses don't have the necessary skills or knowledge for disaster response and therefore require further education so they are better prepared. Also illustrating that disaster response is something different to our every day is the changes that occur within the ED space and challenges associated with looking after unfamiliar patient groups

such as those with burns injuries. Additionally the psychological impact that is reported by many authors also adds weight to the fact that disaster response is challenging and is different from the every day experience of working in the ED. This highlights a need to further explore what constitutes a disaster for emergency nurses.

Summary

This review was informed by literature that explores the role and experience of emergency nurses across the disaster continuum from preparedness and planning through to response. The majority of publications that inform what we currently know in this area encompasses narrative accounts of disaster response and perceptions of as yet hypothetical events. Additionally, much of the literature discusses responses to single events and has originated predominately from countries with well-developed health care systems. Furthermore, prominent themes in the literature identify knowledge deficits related to the experiences of nurses working in less well developed health care systems, challenges associated with disaster response and the impact of participation in disaster response, low level preparedness and knowledge of emergency nurses in relation to disaster response and a limited understanding of the post disaster response phase and long term effects of participation in disaster response.

Although this review indicates the need for a significant body of work across the disaster continuum, it highlights the need to undertake foundational research to generate a deeper understanding of the topic. This research will aim to address gaps associated with the type of literature in three ways; by adding a more structured approach to researching the nursing perspective of disaster response, exploring the experiences of nurses responding to different disaster types and exploring the collective experience of nursing in the ED across different geographic regions. Doing this may also help to bridge the gap in knowledge raised by the themes in the literature by providing a deeper understanding of the experience of nursing in the ED during a disaster response. The proposed research study appears to be the first of its kind to explore the experiences of nurses from different

countries who have worked in the ED during a disaster across a variety of disaster types. The following chapter will provide more insight into the research by discussing the methodology which underpins the research approach.

CHAPTER THREE: PHILOSOPHICAL FOUNDATIONS

Chapter Overview

Chapter One of this thesis describes the context and background to the study and presents the personal drivers from which this research grew. This leads into Chapter Two, which clarifies what is currently known about emergency nurses and disasters and identifies gaps in knowledge that further drive the research. This third chapter will continue to lay the foundation of the research by explaining the methodology best suited to answering the research question; '*What is it like to work as a nurse in the ED during a disaster response?*' The first part of this chapter will situate the reader within the research paradigm while the second part will present an overview of phenomenology and justification as to why Hermeneutic Phenomenology is an appropriate philosophy to underpin this research.

Research paradigm

The term research paradigm refers to the assumptions and views that combine to form the lens through which the researcher situates their world view. The research paradigm is understood to be a basic set of beliefs that guide action (Denzin & Lincoln 2000, p. 157). Identifying assumptions and prior understanding is a not only an important first step in the phenomenological research process, but it is something that the researcher must continually return to (van Manen 2014). It is therefore helpful at this point to introduce my own personal views and assumptions about the phenomenon. My statement of prior knowledge about the phenomenon is presented below in italics so that it can be easily distinguished from the rest of the text.

Reflecting on my experiences working as a nurse in the ED in level one trauma centres and in smaller metropolitan hospitals in Adelaide since 1997 I view the ED as, more often than not, a busy place where people are always engaged in activity. There is often a persistent sense of urgency in the air, particularly among the more junior staff. In contrast, the more experienced staff tend to exude calm despite the

heavy workload and frantic pace. As a nurse I feel that I have equal value as part of a team of dedicated health professionals working together towards common goals. On the flip side of this I also work autonomously, initiating patient treatment and making decisions at triage. Amongst my colleagues, a sense of humour prevails despite the often emotionally charged environment created by the anguish, fear, frustration, sadness and relief felt by patients and their families and friends. There is a strong sense of camaraderie and a general 'can do' attitude with everyone pitching in when they are needed.

My experience provides me with an intimate knowledge of nursing in the ED. Although it could be considered that my experience is relatively focussed because I have only worked in South Australian ED. I believe though that my experiences as a university lecturer teaching post graduate emergency nursing and as a company director of CENA have allowed me to be at the forefront of contemporary issues in emergency nursing and engage with emergency nursing colleagues working across Australia. Additionally, through my involvement with WADEM and on my travels outside of Australia I have met with nurses and visited ED's in countries all over the world including China, Israel, Japan, Scotland, Sweden and Vietnam. This has provided me with a more global perspective of emergency nursing.

These experiences have shaped my assumption that working as a nurse in the ED anywhere in the world is uniquely the same. Emergency nurses share many commonalities through their experiences of caring and treating ill and injured people. I have observed in my professional practice and at conferences and meetings that those who identify as emergency nurses share a similar outlook and passion. The systems, processes and relationships that guide our day to day practice may differ depending on the setting, but the essence of emergency nursing remains the same. Emergency nurses share a bond as a unique sub group in the culture of nursing. The affiliations of professional organisations worldwide and the outpouring of support for colleagues following significant events is testament to that. With this knowledge I come to this research with a prior understanding of the culture and terminology of emergency nursing.

As my career has progressed I have found that with time the ED has become a busier place; a place where patients are delayed for long periods and where the acuity of patient's presenting illnesses have become more acute. The ED is constantly operating at full capacity and staff are always busy. Given this background I assume a disaster event involving an influx of ill or injured people would threaten to completely overwhelm the ED, particularly where a disaster has not been anticipated or previously experienced. Such a situation would certainly overwhelm staff already working to full capacity. However, in my experience, those working in the ED are dedicated to their work and seem to continue to operate with little complaint no matter how hard they are pushed. I anticipate that a disaster event will be absorbed by the staff, including nurses who will continue to operate under difficult circumstances.

On reflecting on the phenomenon of disaster as a whole my experience is largely limited to what I have seen in media reports. In relation to the phenomenon under study; working as a nurse in the ED during a disaster, my current understanding is more assumptive based on the fact that I have never worked as a nurse in the ED during a disaster. My understanding is drawn from reading existing literature, running a Master's Degree program in disaster health care and participating in disaster courses and exercises. The experience I deemed most useful was my role as a nurse in the ED during a mass casualty exercise involving contaminated patients as described by Edwards et al. (2008). This experience emphasised for me limitations in existing knowledge among myself and my colleagues in relation to responding to such an event. The experience was the closest I have ever come to a disaster response, I remember the ED was busy and crowded. I could sense my colleagues were stressed but it was largely hidden behind a calm and official facade. The experience left me with a feeling that we are limited by our imaginations and that until you have had the experience, you don't really know what it will be like. Other exercises have been on a much smaller scale and conducted in less formal surroundings rarely taking into account the current situation in the ED.

Written above is what I currently understand to be true about the phenomenon that I am about to engage with through this research journey. It is necessary for the

researcher to recognise their existing understanding so as to allow the phenomenon to show itself in a different way. To begin a process of understanding McManus Holroyd (2007, p. 4) states:

> *one must start by reflecting on one's own pre-understandings and the meanings that exist within them in an effort to both determine their legitimacy and to contain their influence on new understanding.*

Therefore by returning to what we previously understood about the phenomenon it is possible to see that there are different ways of knowing.

The purest way to truly know or understand what something is like is to have the experience for oneself. This research is conducted on the premise that it is not possible to expose all nurses who work in the ED to a disaster response, but that their role and the possibility of a disaster occurring requires emergency nurses to have an understanding of what this situation might be like so they are better prepared to respond should they have to. In essence, the best way to approach the research question; '*What is it like to be a nurse working in the ED during a disaster response?*' is to let those that have had the experience answer the question, thus providing, for others, an understanding of what the experience is like. This centres on the concept of vicarious learning.

Vicarious refers to something that is experienced in the imagination through feelings or through the actions of another person (Oxford 2016). This is unlike direct experience that occurs when a person is emerged within and undergoes the experience for themselves. According to Fox (2003, p. 100) until the time actual experience can be gained the human imagination can be activated to provide a kind of virtual experience. This belief is at the root of vicarious learning which was originally termed by psychologist Albert Bandura to describe learning through direct observation (Hannum 2015). Today, vicarious learning (also referred to as experiential learning) refers to the act of learning from other people's experiences in general, not just through observation (Fowler 2007; Roberts 2010). Vicarious learning emphasises that the source of the learning material is from experience (Fowler 2007, p. 430). The intent of this research therefore draws on this concept by transforming nurses' experiences of working in the ED during a disaster into

words that are meaningful to those who have not had the experience or words that resonate with those who have. The hopeful outcome of this is to raise a deeper awareness and understanding of the role and experience of nursing in the ED during a disaster response so as to better prepare and guide nurses for future disaster response.

It is anticipated that the research will elicit a broadly generalizable description of what it might be like for a nurse to work in the ED during a disaster rather than one single definitive answer which succinctly defines the experience. This is because the experience of each nurse entering into a disaster response situation is informed by many individual factors which may include previous disaster experience, nursing experience, emergency nursing experience, specific training, the type of event, the personal impact of the event, and other factors such as culture, gender and age. Therefore, individual perceptions of the experience may vary. What this research aims to do is explore the commonalities within the experience so as to guide understanding of what the experience of working in the ED during a disaster response might be like for most nurses who find themselves in that situation.

Finally, this research is conducted under the premise that existing disaster definitions may not adequately contextualise disaster for emergency nurses. This is because, as was demonstrated in Chapter One what might be considered a disaster for some, is not necessarily a disaster for others. For this reason no specific definition of disaster was chosen to underpin this research at the beginning of this thesis. Instead it will be left to participants to determine if what they participated in was a response to a disaster. This research will therefore seek to understand the meaning of disaster from an emergency nursing perspective.

Philosophical perspective

Phenomenology presents as an appropriate methodology to respond to the question *'What is the experience of working as a nurse in the ED during a disaster response?'* because the main aim of the research is understanding the lived experience of nurses working in the ED during a disaster response. This aim aligns

with the main premise of phenomenology which is to explore the lived experience. Under its broad umbrella term, 'phenomenology', the study of lived experience or, as Heidegger articulated; 'the science of phenomena' (Heidegger 1962, p. 50), supports the requirements of this research to generate an understanding of the experience of nurses who have worked in the ED during a disaster response. However, with time, phenomenology has branched out in many directions becoming a philosophy with many different facets and perspectives. The following discussion describes the phenomenological pathway that inspires this research leading the reader to conclude that Hermeneutic Phenomenology fits well with the requirements of this research as an underpinning methodology.

Descriptive Phenomenology

Phenomenology as a philosophical movement emerged at the beginning of the twentieth century. The development and progress of this movement occurred during historically interesting times and is characterised by numerous great thinkers. Many, including himself; credit German Philosopher Edmund Husserl (1859-1938) as its founder (Spiegelberg 1982; Crotty 1996; Sokolowski 2000; Moran 2001; Whitehead 2007; McConnell-Henry *et al.* 2009; Tuohy *et al.* 2013; Woodruff Smith 2013; Nelms 2015). However, the term 'phenomenology' had previously been used by Buddhist philosophers and in the philosophy texts of Emmanuel Kant (1724-1804), Johann Heinrich Lambert (1728-1777), Johann Gottfried Herder (1744-1803), Johann Gottlieb Fichte (1762-1814) and Georg Wilhelm Friedrich Hegel (1770-1831) in the eighteenth century (Moran 2001; Dowling 2007). The ideas of these and other earlier European philosophers such as Franz Brentano (1838-1917), Ernst Mach (1838-1916) and Karl Stumpf (1848-1936) also played an important role in the historical development of phenomenology (Speigelberg 1982; Jones 2001; Moran 2001; Dreyfus & Wrathall 2009; Nelms 2015). Whilst these philosophers did not always publicly name or identify their ideas, their thoughts helped shape and guide the philosophy later identified as *phenomenology*. The following discussion introduces some of the key players who shaped the phenomenological movement, leading into a discussion of the particular philosophy chosen to underpin this research; Hermeneutic Phenomenology.

Franz Brentano

In the initial stages of the phenomenological movement Brentano stands out as a strong influence. Brentano had an interest in the emerging science of psychology. He was concerned with developing psychology as a rigorous science thus providing a scientific basis for disciplines based on human judgement and coining the term 'descriptive psychology' (Spiegelberg 1982; Moran 2000). Brentano did not claim to be a phenomenologist but the word 'phenomenology' can be found in his unpublished writings (Spiegelberg, 1982, p. 27).

Brentano's major contribution to phenomenology is the notion of 'intentionality' (Jones 2001, p.67). Intentionality is the idea that all human consciousness is directed toward an object (Cohen 2000; Moran 2000; Jones 2001). This concept is further defined by Sokolowski (1982, p.8) who states:

> *The core doctrine in phenomenology is the teaching that every act of consciousness we perform, every experience that we have, is intentional; it is essentially 'consciousness of' or an 'experience of' something or other. All our awareness is directed toward objects. If I see, I see some visual object, such as a tree or a lake; if I imagine, my imagining presents an imaginary object, such as a car that I visualise coming down a road; if I am involved in remembering, I remember a past object; if I am engaged in judging, I intend a state of affairs or fact.*

An important observation is that the concept of 'object' does not necessarily occur in material form; it can be a feeling or a perception of the individual and can be purely imagined. Brentano uses the concept of a round square to illustrate this, where it cannot physically exist, it can exist in the mind of the person who conjures it (Moran 2000). Later Husserl credited Brentano for bringing the concept of intentionality to his attention, and embraced intentionality as a core theme in his philosophy (Spiegelberg 1982). Although Brentano anticipates many of the themes of phenomenology, it is Husserl who conceived of phenomenology as a science of the essential structures of pure consciousness (Moran 2000, p. 60).

Edmund Husserl

Originally a mathematician, Husserl was strongly influenced by Brentano and transitioned to philosophy after attending his lectures (Spiegelberg 1982; Moran 2000). Throughout his life Husserl recognised Brentano's influence through his

lectures and publications (Moran 2000) and like Brentano, Husserl strived for scientific rigour. However, Husserl criticised Brentano's descriptive psychology as a science that had gone wrong by attempting to apply methods of the natural sciences to human issues (Laverty 2003). Husserl developed phenomenology as an alternative to the empirically based positivist paradigm that was prominent at the time (Nelms 2015). He believed that human beings generally go about the business of daily living without critical reflection on their experiences and felt that a scientific approach was needed to bring out the essential components of the lived experiences specific to a group of people (Lopez & Willis 2004, p. 727). Thus at the beginning of the 20th Century, with the publication of his book *Logical Investigations*, Husserl introduced Phenomenology as a philosophy and a way to understand the lived experience of human beings (Moran 2000). Over time, this initial branch of phenomenology has been labelled as 'Descriptive' or 'Husserlian Phenomenology'.

Husserl is perhaps most widely known for his catch phrase 'To the things themselves!' This statement is central to all phenomenological inquiry and therefore an important addition to this discussion because it drives the aim of this research. The words that follow from McConnell-Henry *et al.* (2009, p. 8) help to explain exactly what is meant by the words 'to the things themselves':

> *The things being the lived experience. This approach allows the 'things' to speak for themselves while at the same time contextualising them and for the most part, providing greater meaning of the phenomenon under review.*

Another concept central to descriptive phenomenology is that of 'bracketing', also referred to as 'epoche' and 'reduction'. Bracketing refers to the process whereby the researcher identifies and sets aside any prior knowledge, bias, beliefs, assumptions or judgements they may have in relation to the question (Koch 1999; Dowling 2004; Lopez & Willis 2004; McConnell-Henry *et al.* 2009; Nelms 2015). For example, in relation to this study, this would necessitate putting aside my experiences as an emergency nurse, the knowledge I have of what it is like to work in the ED, my previous research and discussions with colleagues who have worked in the ED during a disaster. Doing so requires the researcher to essentially ignore

their prior knowledge so as not to make assumptions. Husserl believed that doing this would eliminate researcher bias and provide insight into the common features of the lived experience, which he called 'essences' (Koch 1999; Lopez & Willis 2004; Wojnar & Swanson 2007).

By implementing bracketing and identifying common features, the lived experience of the participants emerges as a generalizable description of the phenomenon free from pre-supposition (Jones 2001; Sharkey 2001; Lopez & Willis 2004; Wojnar & Swanson 2007). Husserl's phenomenology is therefore a descriptive account of the lived experience motivated by a desire to produce objective data (McConnell-Henry *et al.* 2009). This was a sticking point for me because being an emergency nurse for the past twenty years and all the experiences that have come with that form a big part of my identity that is difficult to ignore. Furthermore, I wanted to move beyond simple description of the participant experience to draw out the meaning that is embedded within the phenomenon.

Martin Heidegger

Some years later, Heidegger (1889-1976) who was Husserl's colleague, friend and eventual successor challenged Husserl's construction of phenomenology as purely descriptive (Moran 2000; Laverty 2003; Mackey 2005; McConnell-Henry *et al*. 2009). Husserl and Heidegger were both attentive to the lived experience that is synonymous with phenomenology; however this is essentially where their philosophical perspectives diverge. The point of the dialogue thus far is to demonstrate the development of phenomenological thought and the philosophical point at which Hermeneutic Phenomenology was conceived. The following discussion will explore Hermeneutic Phenomenology, the branch of phenomenology that originated with Heidegger.

Hermeneutic Phenomenology

Heidegger introduced Hermeneutic Phenomenology to the world when he rejected the founding views of Husserl in his book *Being and Time* published in 1927.

Although he largely rejected Husserl's views Heidegger credited him for having laid the foundations of phenomenology and dedicated his book to Husserl (1962, p. 62):

> *The following investigation would not have been possible if the ground had not been prepared by Edmund Husserl, with whose Logische Untersuchungen phenomenology first emerged.*

With this publication the friendship between Husserl and Heidegger is said to cool as their philosophical differences became obvious (Moran 2000, p. 207). While Husserl focused on understanding phenomena through perception, recollection and thinking about the world and human beings, Heidegger focused on the situated meaning of human existence (Laverty 2003). These differing perspectives demonstrate where Husserl and Heidegger's principle views diverge. While both philosophies concentrate on the lived experience, the differences between the two are marked (Paley 1998, p. 817). The point at which the two philosophies diverge stems from Heidegger's ontological pursuit of the meaning of Being which is in direct contrast with Husserl's epistemological search for knowledge. Hence Mackey (2005) posits that researchers commit to an ontological approach if they utilise Hermeneutic Phenomenology to underpin their research.

Heidegger believed that any description of being without interpretation, either in the way of its telling, its recording or its re-telling, is impossible (Heidegger 1962; Mackey 2005). Through this premise, Heidegger draws inspiration from Hermeneutics to guide his beliefs and build on the philosophy of phenomenology. The word 'hermeneutic' originates from the Greek word 'hermeneuin' which means 'to interpret' (Heidegger 1962). Hermeneutics has its origins in Greek mythology with Hermes, who was a messenger with an ability to interpret messages from the Gods into a meaningful form that could be understood by human (Moran 2000; Jones 2001; McManus Holroyd 2007). Hermes had the ability to translate the words of the Gods. Hermeneutics is therefore identified as the art or science of interpretation or the ability to draw out meaning in the human lived experience (Allen & Jensen 1990; Moran 2000). According to Finlay (2009, p. 11) interpretation is an inevitable and basic structure of our 'being-in-the-world' because we experience a thing as something which has already been interpreted.

Hermeneutic inquiry has been used throughout history for the interpretation of texts, largely religious, classical and legal texts (Spiegelberg 1982; Geanellos 1998; Moran 2000; Sokolowski 2000; Jones 2001; McConnell-Henry *et al.* 2009). In the early 18th century Freidrich Schleiermacher (1768-1834) a theologian, advanced the focus of hermeneutics from interpretation to an examination of understanding itself (Geanellos 1998, p. 159). Schleiermacher believed that in interpretation it was essential to understand not only the language as it was intended at the time of writing but also the mindset of the author (Moran 2000, p. 271). Later, William Dilthey (1833-1911) also a theologian, further developed Schleiermacher's concept of getting into the mindset of the author and his focus became the lived experience (Moran 2000, p. 276). Dilthey introduced the concept of time to hermeneutics perceiving understanding to be contextual, existential and situated in time and place (Geanellos 1998, p. 159). Heidegger no longer used the term in reference to interpretation of texts but in relation to the interpretation of human existence (Spiegelberg 1982; Sokolowski 2000).

In developing his philosophy, Heidegger draws inspiration largely from both Husserl and Dilthey and fuses the lived experience component of phenomenology with the art of interpretation and understanding that is hermeneutics. The resulting philosophy is known as 'Hermeneutic Phenomenology', which allows interpretation to generate understanding and look for meaning embedded in the lived experience of human beings (Spiegelberg 1982; Jones 2001; Lopez & Willis 2004).

Heidegger rejected the idea of a human (subject) as a separate being in a world of objects (Mackey 2005, p. 181). Koch (1999, p. 24) describes this concept in that humans are part of the world and the world part of them; 'it is a world that we live and, as we live it, it is a world that we are'. This is also explained by Todres (2001, p. 5) who states:

> *Within this perspective we cannot define man or woman `in him or herself' as separate from the way he or she occurs in and as world relationships. Human existence is world relatedness; they co-constitute each other and cannot be defined, except relationally.*

Heidegger's primary focus was 'being-in-the-world', how individuals exist, act or are involved in their world (Spiegelberg 1982; van Manen 1990). This focus on the capacity of human beings to comprehend their own existence in the world is referred to as 'Daesin' (van Manen 1990; Cohen 2000; Mackey 2005). Daesin acknowledges that a human subject experiences their world and is present in that world from an individualised perspective which takes into account who they are, their culture, religion, upbringing and knowledge, factors which are ignored in Husserlian phenomenology. Heidegger criticised Husserl's prioritisation to observing or interpreting an entity from a neutral, dispassionate or theoretical perspective over the engaged, lived moment experience connected with the world (Moran 2000).

A statement of prior understanding is an essential step of hermeneutic phenomenological inquiry. Heidegger asserts that in order to pose a question, one must have some prior knowledge (Moran 2000). This however, creates the possibility that prior knowledge can distort or conceal the answer completely, so it is essential to scrutinize prior understanding before undertaking the research process (Moran 2000). A statement of prior understanding is presented as part of the discussion about the research paradigm (p. 45). Prior knowledge and understanding as a concept in Hermeneutic Phenomenology is referred to as 'fore structure', or 'fore-conception', and refers to what is understood or known in advance (Mackey 2005; McManus Holroyd 2007). Heidegger's view was that nothing can be encountered without reference to prior understanding (Laverty 2004, p. 8). I will use the following scenario to illustrate this from a practical albeit simplistic point of view. Imagine a junior nurse walks into a patient's room to find that the patient has laboured breathing, a pale pallor and a decreased conscious state. The nurse takes a set of vital signs and notes that they are all outside normal limits. The nurse knows that these signs are not congruent with other patients he has previously cared for who have survived their illnesses. His mind retreats back to his nursing studies when he was told what happens to someone when they die and then he remembers a scene from a movie where an old man, just like this old man, died. The nurse then interprets all of these indicators and concludes that his patient

is therefore dying. So while the nurse had not been explicitly told that this patient was dying his prior understanding (fore structure) of death and dying lead him to conclude that his patient is close to death.

Past experiences influence both present and future dealings (McConnell-Henry *et al.* 2009, p. 11). This is referred to as 'Throwness' in which we do not live in a world of choice but one which is dictated by the past (Jones 2001, p. 70). Jones goes on to say that we can choose how we respond and how we allow our present and future to be shaped by it, but we cannot escape it (Jones 2009, p. 11). Rather than be identified and forgotten, prior understanding should always be reconsidered in terms of the whole of the understanding of something (Mackey 2005; McManus Holroyd 2007). Therefore, the researcher must return to their prior understanding and reconsider it once the participant data has been collected. This process is identified as the 'Hermeneutic Circle' and refers to the back and forth movement between partial and complete understanding of the phenomenon (Mackey 2005; McConnell-Henry e*t al.* 2009).

Fore-structure draws heavily on the way Heidegger considers time (temporality). Heidegger dictates that understanding through interpretation cannot be achieved unless the interpretation is grounded in the consideration of time (Mackey 2005, p. 183). According to Spiegelberg (1982, p. 393) the three phases of time; future, present and past parallel three aspects of 'Sorge' (care or concern) in which we are ahead of ourselves toward possibilities of future existence, are immersed in the facticity of our past, and fall for the escapes of our present. Heidegger proposes that consciousness is not separate from the world, but is an accumulation of temporally situated experiences over the course of one's life span (Orbanic 1999, p. 142). Time, in this context therefore does not occur in a linear fashion as it is often understood. Our experience is inextricably linked to the cumulative experience of past, present and future as one entity.

Hans-Georg Gadamer

Hermeneutic Phenomenology has grown as a philosophy and has developed and subsequently been informed by others, most significantly Hans-Georg Gadamer

(1900-2002). Gadamer, a student of both Husserl and Heidegger (Sokolowski 2000; Laverty 2004), extends Heidegger's concepts further with the aim to clarify how understanding takes place (Koch 1999; Jones 2001; Laverty 2003). According to Gadamer understanding emerges through language. This process is referred to as the 'fusion of horizons' whereby a common understanding is reached through an interaction between the interpreter and the meaning of the text (Sharkey 2001; Laverty 2004).

Another concept central to Gadamer's perspective is 'pre judgement' or 'prejudice'. Pre judgment refers to the history of an individual which shapes interpretation by preceding all thought (Jones 2001; Sharkey 2001). Humans always function from a position of prejudice and prejudice precedes thought (Jones 2001, p. 73), meaning that all that we are, all that defines us as an individual such as culture, race, gender, age, sexual orientation and social class will guide our perception. This is why there can be no single truth. Each individual is affected by a different set of circumstances which shape their perception of an experience differently to another individual. Heidegger and Gadamer embrace these experiences and assumptions and understanding arises when we use this to help acknowledge the meaning of the text (Koch 1999, p. 32).

Max van Manen

In more recent years, Canadian educator Max van Manen (1942- present) has emerged as a major figure in the world of contemporary phenomenology. van Manen has spent many years translating classical phenomenological texts and developing methods of conducting phenomenological research (http://www.maxvanmanen.com/biography/). In his first book; *Researching Lived Experience: human science for an action sensitive pedagogy* van Manen introduced and described a hermeneutic approach to human science research and writing (van Manen 1990). van Manen's method of exploring lived experience is an interpretive, artistic approach, the foundations of which are writing and language (Nelms 2015).

van Manen (1990, p. 101) presents lifeworld existentials as a way to guide reflection. Existential philosophy was introduced by Soren Kierkegaard (1813-1855)

however, Heidegger was one of the first thinkers to combine existential concerns and phenomenological methodology (Valle *et al.* 1989). Valle *et al*. (1989, p. 6) go on to say that joined together in this fashion, existential phenomenology can be viewed as that philosophical discipline which seeks to understand the events of human existence in a way that is free of the presuppositions of our cultural heritage. Heidegger's incorporation of existentialism centres largely upon his concept of human being in which existence is a basic feature (Spiegelberg 1982). Because of this Heidegger earned a reputation as an existentialist, something he always denied (Spiegelberg 1982, p. 351).

van Manen expands on this concept through the use of the terms 'lifeworld' and 'lived world' which are used interchangeably to describe the world in which humans live in on an everyday basis (van Manen 1990). Although he recognises the multiple and different life worlds that belong to human existences and realities, van Manen puts forward four existential themes which pervade the lifeworlds of all human beings (van Manen 1990, p. 101). The existential themes that van Manen suggests to guide reflection are; 'lived space' (spatiality), 'lived body' (corporeality), 'lived time' (temporality) and 'lived human relation' (relationality or communality). In his second book: *Phenomenology of Practice: meaning-giving methods in phenomenological research and writing* van Manen (2014, p. 302) introduces another existential theme; 'lived things' (materiality) and changes terminology from 'lived human relation' to 'lived self-other'. Applying these themes in the research process facilitates a deeper understanding of the lived experience.

Also central to van Manen's approach is writing. van Manen describes writing as not just an activity whereby pen is put to paper or fingers to the keyboard. Writing in a phenomenological way is an immersive process whereby the researcher reflects on what has been written and continues to restructure the words so that they are not only a true reflection of what the writer wants to depict, but so that they reach out and induce wonder within the reader (van Manen 2014). The process of writing is therefore equally as important as the product in that it is through writing and re-writing that the researcher creates depth and meaning and the phenomena is revealed (Nelms 2015).

In his 1990 publication van Manen proposes an approach to conducting Hermeneutic Phenomenological research which has been adopted by many researchers worldwide. In this text van Manen presents six research activities (van Manen 1990, p. 30):

1. Turning to a phenomenon which seriously interests us and commits us to the world
2. Investigating experience as we live it rather than as we conceptualise it
3. Reflecting on the essential themes which characterise the phenomenon
4. Describing the phenomenon through the art of writing and rewriting
5. Maintaining a strong and orientated pedagogical relation to the phenomenon
6. Balancing the research context by considering parts and whole.

Although numbered, van Manen does not intend the activities to be a linear process. He presents the approach as a methodological structure but identifies that dynamic interplay occurs between the six activities (van Manen 1990, p. 30). Although he presents what appears to many as a distinct approach, van Manen supports the idea that the approach to research is not pre-determined or pre-organised, but instead evolves (1990, p. 29):

> *The methodology of phenomenology is such that it posits an approach toward research that aims to be presuppositionless; in other words, this is a methodology that tries to ward off any tendency toward constructing a predetermined set of fixed procedures, techniques and concepts that would rule-govern the research project…the paths (methods) cannot be determined by fixed signposts. They need to be discovered or invented as a response to the question at hand.*

This points to the fact that the approach he has suggested is not intended to be a fixed set of rules but rather a guide or a suggestion. In his later publication; *Phenomenology of Practice* van Manen expands on this discussion of a method-less approach saying that 'phenomenology is less of a determinate code of inquiry than the inceptual search for meaning of pre-reflective experience' in that the search for meaning in the human lived experience is driven by wonder (van Manen 2014, p. 27).

Given this perspective, the task of the researcher therefore, is to determine an approach which will best answer the research question utilising the perspective of a branch of phenomenology which best fits with the research question. van Manen (2014, p. 226) calls this the 'Methodological Epoche-Reduction: Approach'. Studies conducted in a Hermeneutic Phenomenological way can therefore evolve. Cohen (2000, p. 71) describe this process as moving between two metaphors; 'that of a field text, constructed through the activities of data collection and that of a narrative text, which is meant to convey the researcher's present understanding and interpretation of the data to all other readers'.

Why Hermeneutic Phenomenology?

To this point a brief overview of the historical development of phenomenology as a philosophy, the philosophical thinkers and their seminal ideas has been presented to demonstrate the development of phenomenological thought through to the branch of phenomenology known as Hermeneutic Phenomenology. The next step in the research process is therefore to determine an approach to conducting the research. As highlighted in the discussion above about van Manen, a phenomenological approach to research does not prescribe a detailed, pre-determined approach (McManus Holroyd 2007). Phenomenology was first and foremost a philosophy and none of the people involved in establishing phenomenological thought intended there to be a prescribed approach to conducting research (Dowling 2007, p. 134). The view that the philosophy of phenomenology has evolved over time and with philosophical insights from many people is reflected by van Manen (1990, p. 30):

> *…it is true that the method of phenomenology is that there is no method, yet there is tradition, a body of knowledge and insights, a history of lives and thinkers and authors, which, taken as an example constitutes both a source and a methodological ground for present human science research practices.*

However, with time, and through desire to make the research process more valued in the eyes of those familiar with the positivist paradigm, specific methods for undertaking phenomenological research in the Husserlian tradition have been

created by Colaizzi, Giorgi, van Kaam and Spielberg (Dowling 2007; van Manen 2014; Nelms 2015).

Methodologies are generally chosen with a view to best answer the research question. Therefore, given the research question; *'What is it like to work as a nurse in the ED during a disaster?'* the chosen methodology should enable the researcher to access an appropriate population and apply suitable methods to elicit an answer to the question that has been posed. Phenomenology requires the researcher to garner the lived experience of humans and present it in a meaningful way and it is this that drew me initially to the broad philosophy of phenomenology. The idea that this research could be based on the experiences of others who have lived through the phenomenon aligned closely with my assumptions that in the absence of the experience itself, vicarious learning is a favourable way to develop an understanding of the experience. Therefore this research will utilise the voices of those who have experienced the phenomenon to raise awareness and understanding in those who haven't and to give meaning to something all emergency nurses could potentially encounter at some point in their working lives.

Branching into Hermeneutic Phenomenology there were two aspects which attracted me and which I will expand on. These are the concepts of interpretation and fore structure. Unlike Husserl's phenomenology which places emphasis on describing the lived experience, Hermeneutic Phenomenology incorporates interpretation to generate meaning of the lived experience. From the moment they are born human beings begin making sense of their world and meaning occurs when things within our world are understood through interpretation (Heidegger 1962, p. 192). Because the majority of literature which currently informs what is known about nursing in the ED during a disaster is narrative and descriptive, I wanted to move beyond mere description to generate meaning in the experience.

The other aspect that attracted me to Hermeneutic Phenomenology was the concept of fore structure. Through reading about descriptive phenomenology I struggled to accept the concept of bracketing. As an emergency nurse I found it difficult to accept that I must put aside all that I have come to know about

emergency nursing and disaster response as my knowledge and experience in this area had developed over nearly two decades and had become a part of my psyche. Through a statement of prior knowledge (p. 45) I was permitted to explore my assumptions and experiences and incorporate them into my interpretation of the phenomenon.

While I was drawn to the overarching principles of Hermeneutic Phenomenology and in particular the interpretative nature of the methodology, I struggled at times to understand the language used in the vast amount of literature I had read. In fact, in his book about the phenomenological movement Spiegelberg (1982, p. 337) observes that no reader without an exceptional command of German can expect to fathom the sense and full connotations of Heidegger's language. Spiegelberg (1982, p. 337) goes on to remark:

> *Even the native German finds himself all too often stymied by Heidegger's style of writing, which would almost call for a translation into ordinary German. For Heidegger has a way of not only forming new terms based on obsolete root meanings, but of using existing words for new and unheard-of purposes without providing a glossary as a key or introducing his new uses by explicit definitions.*

It was necessary therefore to turn to the writings of others to garner a deeper understanding of phenomenology.

The original works of Heidegger, Husserl and other phenomenologists have been translated numerous times. Each author brings a slightly different interpretation on the original text. I found many of the translated works to be challenging to understand and arduous to read through. However, I was drawn to van Manen's writings on Hermeneutic Phenomenology. van Manen's perspective on Hermeneutic Phenomenology drew me in firstly because I enjoyed reading his publications and his pragmatic writing style, in particular his earlier publications resonated with my own pragmatic nature. Secondly, that van Manen is entrenched in a contemporary world to which I can relate, made it easier for me to appreciate his view of Hermeneutic Phenomenology. Finally, van Manen's perspective on Hermeneutic Phenomenology in my opinion, is more closely aligned with the initial concept of phenomenology as a philosophy, in that he doesn't prescribe a strict

approach to research. Unlike other contemporary philosophers in the area, van Manen encourages the researcher to allow the study to evolve from the research question. This appealed to me because it provides flexibility and creativity in that the research process is not confined to strict guidelines or procedures. The following chapter will provide a focussed discussion of the research approach which is underpinned by Hermeneutic Phenomenology and inspired by the pragmatic outlook of van Manen.

Finally, the existing literature presented in Chapter Two indicates that there is something different about disaster response. Disaster response in the ED creates unique challenges associated with an influx of people and an inability to manage the surge of patients within the confines of the existing ED. Additionally structural changes, disruption to services and supplies may require nurses to work in satellite areas such as decontamination tents and outside triage. Furthermore the possibility of disaster response causes us to reflect upon our ability to cope. When exploring something that disrupts the ordinary and taken for granted aspects of our existence Hermeneutic Phenomenology emerges as a suitable methodology because it provides an opportunity to find meaning within the experience (McManus Holroyd 2007, p. 2).

Summary

This research seeks to explore meaning within the lived experience of nurses who have worked in the ED during a disaster response. Phenomenology was initially identified as the most appropriate philosophy to underpin the research in that it facilitates exploration of the lived experience. More specifically, the branch of Phenomenology which emerges as the most appropriate methodology to underpin the research is Hermeneutic Phenomenology. There are three key reasons for this. Hermeneutic Phenomenology extends beyond description of the lived experience to interpretation of the experience and presents the ability to develop meaning within the experience. Given that much of the literature which currently informs what we know about the phenomenon is already descriptive in nature, it is useful to move beyond this to develop meaning within the experience. The second reason is that

Hermeneutic Phenomenology requires the researcher to be an integral part of the research process. This allowed me to embrace my identity as an emergency nurse. Finally, van Manen's interpretation and pragmatic approach to writing made it easier for me to understand and utilise Hermeneutic Phenomenology as a methodology. The application of the philosophy of Hermeneutic Phenomenology to the process of conducting research is described in the next chapter.

CHAPTER FOUR: RESEARCH APPROACH

Chapter Overview

Chapter Three provided an overview of the historical development and central tenets of Hermeneutic Phenomenology leading to a justification of why this is the most appropriate methodology to respond to the research question and the aims of this research. Chapter Four will describe the research process and align it with the chosen methodology of Hermeneutic Phenomenology. This chapter will describe the approach to research as four distinct but non-linear phases.

Research process

When conducting research the method, methodology and the objectives of the research need to be compatible. For example, there is no point utilising a closed question survey approach if the aim of the research is to illicit rich descriptions of nurses' experience of working in the ED during a disaster response and equally if the scenario is flipped. There is little use in undertaking a phenomenological study to determine the number of ED nurses who have participated in disaster training in the last 12 months. The choice of methodology largely determines the approach to research and so it needs to align with the objectives of the research.

The main objective of this research study is to answer the question; *'What is it like to work as a nurse in the emergency department during a disaster?'* To understand what something is 'like' it is necessary to draw from the experience of the phenomenon. Broadly speaking this can be done through Phenomenological research which aims to elicit the lived experience. However, returning to the research objectives stated in Chapter One (p. 12) two of them extend beyond simple description of the lived experience in that they require further clarification

about the experience:

- Explore the understanding of the phenomenon and the meaning of disaster for nurses working in the ED
- Recommend strategies to respond to the findings

These objectives justify Hermeneutic Phenomenology as a methodological approach because further interpretation of the lived experience is needed that wouldn't be possible if the research was underpinned by Descriptive Phenomenology.

Rather than following a rigid set of pre-determined rules for undertaking research in a hermeneutic paradigm, van Manen presents an approach which is driven by the research question and can therefore evolve organically. The approach to research is described in this chapter as four distinct phases; *seeking, determining, generating knowledge* and *illumination*. The division of this chapter into four phases is for ease of understanding rather than an indication that the activities occurred in a linear fashion. Similar to the research activities described by van Manen (1990) the approach to this research was dynamic and evolving moving back and forth between different activities.

Seeking

The defining moment of wonder that led to this research occurred while sitting on the couch in my lounge room late one night watching news reports of the 2001 World Trade Centre attack on the television. As I watched an event unfold that I had never imagined previously, I literally paused and wondered; *what would it be like to be a nurse working in a New York ED right now, what would it be like if something like this happened in my ED?* At that time in my career I had four years of emergency nursing experience under my belt and it suddenly occurred to me that I could be the most senior nurse on shift when a disaster happened and everybody might turn to me for the answers to questions I didn't know. Until that day, disaster response was a foreign concept to me. I had never considered the impact of disasters on a healthcare system or the role of emergency nurses in disaster response. In my undergraduate nursing degree I never learnt anything about

disasters. As a qualified nurse I had never responded to a disaster, I didn't know that each of the hospitals I worked at had a specific plan for disaster response and I had never been exposed to any disaster training. This moment and the sense of wonder that it inspired is what van Manen (1990, p. 31) describes as 'turning to the nature of the lived experience'. In van Manen's words (1990, p. 31) phenomenological research is always:

> *a project of someone: a real person, who, in the context of particular individual, social and historical life circumstances, sets out to make sense of a certain aspect of human existence.*

This research therefore emerged from my initial sense of wonder and personal experience with the phenomenon nearly 15 years ago.

Research question

The research question emerges through a desire to understand more about the topic and was introduced in Chapter One as; '*What is it like to work as a nurse in the ED during a disaster response?*' Through exploring this question a deeper understanding of the meaning behind the experience of nursing in the ED during a disaster response will be generated. Once the research question was conceived, reflecting on the researcher's prior understanding of the phenomenon was the first step in conducting this research. A statement of pre-understanding and assumption is presented in the previous chapter (p. 45). In doing this, all that the researcher assumes and believes about the phenomenon is considered and fixed in written form (Cohen 2000, p. 86). Through epoche we acknowledge presumptions, common understandings and scientific explanations about the phenomenon thereby allowing us with an open state of mind to look to the phenomenon (van Manen 2014). This is an important first step in Hermeneutic Phenomenology and the researcher is required to continuously engage with their assumptions and reflect on them. This is a process referred to by van Manen (2014) as 'reduction'. According to van Manen (1990, p. 47), if we forget or ignore what we already 'know' we may find that the presuppositions persistently creep back into our reflections. Hermeneutic Phenomenology therefore recognises the researcher as a vital component of the research process and meaning is facilitated through the researcher's involvement in

interpreting (McConnell-Henry *et al*. 2009, p. 9). The process of interpretation is produced by moving back and forth between the researcher's fore conception of understanding and what was learned through the investigation resulting in a shared understanding (Lopez & Willis 2004; Wojnar & Swanson 2007). It is therefore important for the researcher to return to their initial pre-understanding and assumptions to validate or dismiss prior understanding of the phenomenon.

Determining

This phase of the research process relates to identifying and engaging with the most appropriate tools to illuminate the phenomenon. This research therefore utilises the voices of those who have had the experience and the researcher's interpretation of those experiences to allow the phenomenon to manifest.

Ethical considerations

All research is required to be conducted in an ethically sound manner. Ethical conduct in human research is an ethos that should permeate the way those engaged in human research approach all that they do in their research (NHMRC 2015). Ethical permission to undertake this research was sought from the Social and Behavioural Research and Ethics Committee (SBREC) at Flinders University where the principal researcher was undertaking a PhD candidature. An application to undertake research was submitted in April 2012 and the study was approved in May 2012 and provided with the project number: 5701 (Appendix 2). The following discussion highlights the main aspects of the application that were considered so as to ensure that the research was conducted in an ethically sound manner.

Value and benefits to the participants, discipline and community

This appears to be the first research which explores the experiences of nurses across different disaster types and different locations. This study is valuable to the emergency nursing community as it will add to the current limited body of knowledge and provide a deeper understanding of the experiences and perceptions of emergency nurses concerning disaster response in the ED. Furthermore, the findings from this research should inform policy and practice related to disaster

preparedness and response for the wider emergency nursing community. These benefits could extend to the wider community if a better prepared workforce is created as a result of increased awareness and policy or practice change. Additionally, there may be some benefit to participants in that they are given the opportunity to discuss their experiences at length. While not the aim of the research, the act of discussing the experience may be therapeutic for some participants.

Burdens and risks to the participants and/or other people

Identifying burdens and risks to participants is an essential step in the research process because it is integral to guarding people from harm. Participation in this research was likely to result in very minimal burden or risk beyond time spent participating in interviews. There is also a possibility that some participants may find it emotionally difficult to reflect on and discuss their experience of responding to a disaster, which in itself could be considered a traumatic event. It was therefore decided that should participants become distressed the interview would be stopped immediately and would not continue unless the participant wished to continue. Additionally, the participant would be directed to seek counselling from their general practitioner. This offer of support was stated on the consent form (Appendix 3) and at the commencement of each interview but was never required.

Guarding participants from deception

Information was provided to participants so that the research process could be as transparent as possible. Prior to commencement of an interview participants were provided with an introductory letter which outlined the purpose of the study, the benefits and discomforts to the participant, the expectation of the participant as well as contact information for the researcher and supervisors (Appendix 4). Additionally, the researcher was available to participants should they have any enquiries. There was no intent to deceive the participants in any way and the research process was made transparent through additional information provided to participants (Appendix 5).

Guarding the privacy of subjects and confidentiality of data

The privacy of participants has always been important throughout the research process. Participants were known only to the author of this thesis. Participants were promised confidentiality and complete anonymity in any publications and public material that resulted from the research. Interviews were recorded on digital files which were stored in the principal researcher's locked office on a password protected computer. After files were transcribed by the principal researcher the initial digital files were deleted. Transcripts were stored under a generic pseudonym in a password protected file. At no point were names or identifying data included in publications. This information was identified to participants in their information sheet.

Obtaining fully informed consent

Prior to involvement in the study each participant was given a consent form to complete (Appendix 3). As time progressed it became evident that returning the consent from was problematic for participants who often forgot about it. For this reason an ethics modification was completed to allow the consent to be done verbally prior to the commencement of interview. The process of obtaining consent reminded participants of their right to withdraw or not answer a question and also a statement advising them to seek guidance from a medical practitioner should they become distressed.

Rigour

Without rigour, research is worthless, becomes fiction, and loses its utility (Morse 2002, p. 2). While it is essential that rigour is established when conducting research, it is challenging to do so because unlike research conducted in the positivist paradigm, there is no consensus about how this should be judged (Rolfe 2006). Many researchers borrow from the positivist paradigm to measure quality in their research examining constructs of validity, reliability and generalisability in their research (Leung 2015), while others revert to Guba and Lincoln's criteria of credibility, transferability and dependability (Koch 2006). It seems that both approaches attempt to conform to a positivist way of thinking that is structured and

doesn't allow for the uniqueness of different qualitative methodologies. A more simplistic perspective is put forward by Pereira (2012, p. 19):

> *…to be judged valid, a phenomenological study must take into consideration methodological congruence (rigorous and appropriate procedures) and experiential concerns that provide insight in terms of plausibility and illumination about a specific phenomenon. Considering that nursing research is bonded to nursing practice, renewed attention should be given to readability. Researchers should present findings in a way that allows nurses to judge the findings' transferability and adequacy with regard to their unique caregiving situations.*

From a Hermeneutic Phenomenological perspective van Manen (2014, p. 355) argues that the phenomenological text must be evaluated by meeting with it, going through it, encountering it, suffering it, consuming it, and, as well, being consumed by it. Further, he identifies the following criteria which should be used to evaluate phenomenological research:

- *Heuristic questioning*: does the text induce a sense of contemplative wonder and questioning attentiveness?
- *Descriptive richness*: does the text contain rich and recognisable experiential material?
- *Interpretative depth*: does the text offer reflective insights that go beyond the taken-for-granted understandings of everyday life?
- *Distinctive rigour*: does the text remain constantly guided by a self-critical question of distinct meaning of the phenomenon or event?
- *Strong and addressive meaning*: does the text 'speak' to and address our sense of embodied meaning?
- *Experiential awakening*: does the text awaken pre reflective or primal experience through vocative and presentative language?
- *Inceptual epiphany*: does the study offer us a possibility of deeper and original insight, and perhaps, an intuitive or inspirited grasp of the ethics and ethos of life commitments and practices?
  (van Manen 2014, p. 355 – 56).

Throughout this thesis I have attempted to address the criteria suggested by both Pereira and van Manen in the following four ways using my own terminology:

- *Appropriateness* relates to choosing an appropriate methodology and undertaking an appropriate process of research to address the research question as justified in Chapter Three and Chapter Four of this thesis
- *Transparency* relates to the process of describing the research process in a way that is clear and transparent to the reader. This is addressed throughout this chapter
- *Plain speak* refers to writing this thesis and in particular the findings, in a way that is easy to understand. It is important to me that this thesis can be read and understood by any emergency nurse so that findings can be implemented in the clinical setting and the wider emergency nursing community
- *Rich description* refers to the way in which the findings of the research are presented. The aim is to illuminate the phenomenon using rich descriptions which are embedded in the words of nurses who participated in this research as seen in Chapters Five and Six.

Recruitment

In seeking the most appropriate answer to the research question it is essential that participants who were involved in this study have experienced the phenomenon in question. A purposive sampling technique was adopted to recruit participants because this approach requires the researcher to select participants with the experience to provide the information which is sought (Schneider *et al.* 2007, p. 124). This approach required me to draw on my knowledge of the emergency nursing community to seek out participants who would be considered typical of the population of interest (Englander 2012). The group of participants which were therefore sought for this research were nurses who had worked in an ED during a disaster.

Relevant emergency nursing networks within Australia and internationally were identified and contacted via email. Networks included colleges and associations in Australia: College of Emergency Nursing Australasia (CENA), Australian College of Emergency Nursing (ACEN); United States of America: Emergency Nurses Association (ENA); the United Kingdom: Faculty of Emergency Nursing (FEN); New Zealand: College of Emergency Nurses New Zealand (CENNZ) and worldwide, WADEM.

Once permission had been gained from the individual organisation, recruitment emails (Appendix 6) were circulated by them to their membership. This approach resulted in a minimal response, so other means were employed to recruit participants and the same script was sent out through the principal researcher's personal and professional networks via email. This highlighted the relevance of the researcher's prior understanding of the phenomenon to the recruitment process. The email script was also posted on social media such as LinkedIN™, Facebook™ and Twitter™. Subsequent emails from people in these networks indicated that the email had been further circulated to other potential participants as an unanticipated snowball sample technique.

Upon making contact with the principal researcher to declare an interest in participating or an interest in forwarding information on to colleagues, an email was sent to potential participants with a letter of introduction (Appendix 4), information sheet (Appendix 5) and consent form (Appendix 3) attached. Those participants who met the criteria and still wanted to participate replied via return email or post and I contacted the participant to organise mutually appropriate times to conduct interviews.

Participants

The first and most essential criteria for participation in the research was that the nurse had to have worked in the ED during a disaster. Additional to this, there were three other criterion for participation in this study. The first criterion was that potential participants should have no longer than a five year lapse since their most recent disaster response. Although unique and traumatic memories as well as the

gist of an event can be retained in memory for a long period of time, evidence also suggests that the details of the event deteriorate with the passage of time. This is referred to as 'Decay theory' (Ricker *et al.* 2016). As details of the participant experience are relevant to this research, to aid memory recall, a five year period since involvement in the last disaster event was deemed appropriate. Additionally, this time span is useful in ensuring that the majority of participant experiences are consistent with contemporary nursing in the ED, therefore making the findings more transferable in current context.

During the inception of this study, it has been reported that Australian nurses had limited experience with disasters that had overwhelmed the healthcare system (Duong 2009; Hammad *et al.* 2010). Therefore to get a broader picture of the experiences of nurses in disaster response it seemed appropriate to search for participants outside of Australia as well as in Australia. Furthermore, a study like this had not previously been undertaken, so it was necessary to recruit participants widely so that similarities in the experience could be sought despite variances in geographic location. The variation in geographic locations from which potential participants were being sought, meant that participants would likely speak languages other than English. A second criterion was applied so that only nurses fluent in spoken English could participate. This was primarily to aid depth of understanding and interpretation of the data because English is the main language spoken by the researcher.

To remain true to the quest for meaning within the phenomenon, the third criterion for participation was nurses who have had the experience. Thirteen nurses who had worked in the ED during a disaster response were recruited for the study. Participants are from a number of countries; Australia, Indonesia, Israel, Japan, Kenya, Palestine, Saudi Arabia and the United States of America. The events that participants discussed were a mixture of natural and man-made events. Naturally occurring events were bushfire, heatwave, tsunami, earthquake, volcanic eruption and flood, while man-made events were transport incidents, chemical spill and terror attacks. Terror attacks were bomb blasts, ED evacuation due to bomb threat, mass stabbings and mass shootings. In line with my assumption that all disasters are

not equal and therefore existing disaster definitions may not align with an emergency nurses' understanding of disaster, it wasn't necessary that participants only be involved in the research on the basis of participation in a recognised disaster. As a result participants sought involvement in this study because they viewed the event they were involved in as relevant to the research. This led to a wide variation in events. Additionally, while all participants had been involved in a disaster response within 5 years of participating; some participants had also been involved in other responses previously. These experiences were discussed in the interviews with participants vacillating between experiences. As a result, the information was included for analysis.

A comprehensive overview of each participant, of their age, or gender or years of experience as an emergency nurse is superfluous in the case of research conducted in a Hermeneutic Phenomenological manner. van Manen (2014, p. 313) says we 'borrow' people's experiences in a vicarious sort of way as a means to inform ourselves. As such we are not primarily interested in the specific experience of the participant but rather, we aim to collect examples of possible human experience in order to reflect on the meaning within them (van Manen 2014, p. 313). To this extent, the participants will remain largely anonymous throughout this thesis. Anonymity is maintained through pseudonyms and participants are simply referred to as 'Participant 1', 'Participant 2' and so forth throughout the thesis. Additionally, so as to generate some context the type of event discussed is cited at the end of each quote.

Generating knowledge and interpreting

This phase encompasses a large portion of the research process and includes two activities; gathering data and interpreting. Both processes are discussed together as they occurred simultaneously and at various points throughout the research process. This notion is supported by van Manen (1990, p. 63), who states that these two acts are not separable and should be seen as the same process. Cohen *et al*. (2000, p. 71) further supports this method by recognising that the researcher begins

reading the text as it is gathered and in doing so begins the process of analysing and interpreting its meaning.

Gathering data

As human beings we make sense of our world through interpretation, we tell ourselves stories first to make sense of the situation and then to others (Cohen 2000, p. 59). The narrative given by the participant will never be identical to their lived experience; it is a transformation of that experience (van Manen 1990, p. 54). Through retelling the experience the participant has already reflected on and interpreted their experience. The challenge therefore remains for the researcher to capture a description of the lived experience that is as close as possible to the pre reflective lived experience, the experience as it was initially presented to the participant.

The research data was collected through interviews between the participants and the researcher. Interviews are a common data collection tool in qualitative research (Cohen 2000; Englander 2012). The setting for most interviews was the participant's home or somewhere of their choice. The choice of location was largely up to each participant so that they could be in what they perceived to be a relaxed and familiar environment. According to van Manen (2014, p. 315) this is more conducive to participants remembering and telling their life stories.

Geographical distance between the participants and the researcher meant that face to face interviews would be logistically difficult and costly. Most interviews were therefore conducted via Skype™ in a bid to recreate, as much as possible, a face to face interview. There were two exceptions to this. One was where a face to face interview was made possible by the close proximity of the participant to the researcher and because the participant chose this option over Skype™. The other exception was where the interview had commenced using Skype™, but the connection had deteriorated and it was considered by both researcher and participant, easier to continue using either the telephone or the voice only medium on Skype™.

While face to face interviews are often considered the gold standard, there is an increasing recognition of the value of online interviews as an equal alternative to access the ideal research sample rather than a second choice (Deakin & Wakefield 2013, p. 4). Therefore Skype™ facilitated interviews were a flexible alternative which allowed the participant and researcher to see and hear each other, in a way creating similarities to the face to face mode. Skype™ is an online communication software which stands out in the literature as having greater national and international recognition than other online software applications (Deakin & Wakefield 2013, p. 4). Skype™ allows the researcher to conduct the interview in real time and provides an ability to talk and see the participant despite geographic location.

It was anticipated in the initial stages of the research process that interviews would last approximately 60 minutes in duration. However, some participants felt compelled to keep talking, and if it suited both the researcher and the participant they did until the discussion came to a natural end. A second interview was then held approximately a week later. This allowed more time to further explore the experience or presented the participant an opportunity to discuss things that may have occurred to them in the time since the previous interview. In two instances a second interview did not occur (Participant 7 and Participant 13), the reason for this appeared to be that it was difficult to find a mutually appropriate time to talk, often due to geographic distance and busy schedules or because the participant didn't feel the need to continue with another interview.

All interviews commenced with a brief discussion using the demographic survey (Appendix 7) as a template. The survey questions provided an effective ice breaking tool in situations where the researcher and participant were previously unknown to each other. Due to the commonalities between the researcher (an emergency nurse) and the participant this allowed for some back and forth dialogue, which seemed to relax the participant and introduce a conversational tone to the interview. This approach aligns with van Manen's (2014, p. 315) view that the researcher must develop a relationship of personal sharing, closeness or

friendliness with the participant in order to win the trust of the participant so that they can talk openly about their lived experience.

Once the conversation began to die down or all the 'ice breaking' questions had been asked, the researcher asked the participant to think of the most recent disaster response they were involved in and posed the question; 'What were you doing when you realised that there was a disaster?' van Manen (2014, p. 316) recommends that the researcher asks questions such as; 'when exactly did this happen? What were you doing, how did it feel?' in order to explore the event rather than ask questions with the aim to explain or interpret the event. From this initial general question participants began describing what was occurring the moment they found out that a disaster had occurred. As they described this moment of discovering that there was a disaster, the researcher let them talk without interruption allowing them to explore what was happening at the time. As the dialogue waned, the researcher continued to ask questions to prompt the participant such as; 'what was it like? How were you feeling? What did you do next? Who was around you? What did you see?' The interview continued much the same way with the participant doing much of the talking and the researcher prompting with questions every now and then.

The point of the interview is to get a raw description of the participant's experience, devoid of opinions and views (van Manen 2014). Getting to the raw description of the lived experience was a difficult task. Often participants reverted to discussing what 'we' did or what 'we' learnt requiring the interviewer to re direct the participant's attention back to the phenomenon and purely to their own experience of it. Throughout the interviews the researcher prompted the participants for examples and descriptions aimed at extracting the lived experience description rather than opinion or speculation. As participants discussed their experiences clarification was sought to ensure that the researcher's interpretation of the experience matched that of the participant. This process is hermeneutic in nature as it is oriented towards sense making and interpreting the phenomenon which drives the conversation (van Manen 1990, p. 98-99).

Interviews were audio recorded using a Livescribe pen™. The recording was then saved to the Livescribe desktop application ™ on the researcher's computer. This application allows the researcher to take notes while simultaneously conducting the interview. Each interview was transcribed to text onto a Word document. The audio recording provided the researcher with an opportunity to listen to the interview several times and reflect on the conversation. Similarly the transcript provided

opportunity to reflect on the conversation and make notes or highlight relevant parts of the written text.

Interpretation

Interpretation began at the point the participant started to describe their experience with the phenomenon. This was not only the point where the researcher starts to interpret the participants' experience, but it is often the point when the participant starts to make sense of their experience. The focus of Hermeneutic Phenomenology research is to bring this participant narrative into understanding (Geanellos 1998, p. 154) and so interpretation by the researcher continues to occur throughout the hermeneutic interview as the researcher seeks clarification of the participant experience. Once interviews were completed interpretation and analysis occurred through thematic analysis and guided reflection.

Thematic analysis

According to van Manen (2014, p. 319), thematic analysis refers to recovering structures of meanings that are embodied and dramatised in human experience represented in text. A theme is referred to as an element which occurs frequently in the text (van Manen 1990, p. 78). Themes emerge as they illuminate aspects of the phenomenon to the reader. Some themes emerge clearly from the data while others are more implicit within the data and are difficult to identify at first glance. The process of extracting themes therefore requires an intimate knowledge of the data through subsequent readings and re readings.

Transcripts of interviews were initially read a number of times until the researcher felt sufficiently immersed in the transcripts. Excess data not relevant to the

phenomenon, such as comment on the weather or the internet connection was removed. Thematic analysis then occurred using van Manen's (2014, p. 320) three tiered approach. Initially a wholistic reading (van Manen 2014, p. 320) was applied to the transcripts to generate a general feeling of the participants' lived experience. Broad themes that embodied the experience were noted by the researcher and a corresponding statement of the researcher's interpretation of the data generated. The transcripts were read again to identify statements and phrases which revealed meaning within the experience. Statements or phrases that appeared to be particularly essential or revealing were highlighted, extracted from the transcript and grouped together under headings which matched the meaning portrayed within the statement. In a detailed reading each of the previously identified statements were read again to determine what meaning was encapsulated within the words (van Manen 2014, p. 320). Interpretation is a circular and dynamic process and the researcher continually returned to the transcripts throughout the interpretative process. This back and forth movement between partial understanding and the more complete whole (Mackey 2004, p. 182) is a feature of Hermeneutic Phenomenology inquiry.

The themes that emerged from the collective experiences of the emergency nurses in this study provided insight into the 'structures of experience' (van Manen 1990, p. 79) thus painting a picture and facilitating understanding of what it means to be a nurse working in the ED during a disaster. The participants cannot tell us the exact truth, because there are many truths and the experience of the phenomena will be different for everyone and dependant on many factors. However, determining themes that are common within the collective experience will help generate an understanding of what it is like to work as a nurse in the ED during a disaster. Distinct themes which emerged from the data are represented in the next chapter as five *Moments of Disaster Response*. More implicit themes within the data are presented in Chapter Seven.

Guided reflection

Each person's reality is influenced by the world around them, including their past, their beliefs and their culture. A central tenet of Heidegger's thinking therefore is

that the relation of the individual to their lifeworld, the world around them, should be the focus of phenomenological inquiry (Lopez & Willis 2004, p. 729). Heidegger (1962, p. 52) writes:

> *…if one is to put various pictures of the world in order, one must have an explicit idea of the world as such. And if the 'world' itself is something constitutive for Daesin, one must have insight into Daesin's basic structures in order to treat the world-phenomenon conceptually.*

Therefore to conceptualise our world we must have an understanding of the basic structures of our existence which make up the world. Influenced by Heidegger and Merleau-Ponty, van Manen (2014, p. 303) advocates using existential reflection on the data as this provides a heuristic approach to exploring the meaning structures of the experience.

According to van Manen (2014, p. 303) life existentials are helpful universal themes to explore meaning aspects of our lifeworld and a particular phenomenon. This research reflects on the five existential aspects suggested by van Manen (2014, p. 303); 'lived relation' (relationality), 'lived body' (corporeality), 'lived space' (spatiality), 'lived time' (temporality) and 'lived things' (materiality). Because these existential aspects are common to everyone's lifeworld, analysis of the data using existential reflection will hopefully bring the phenomena to light in a way that has meaning for the reader. Reflection occurred through re reading the transcripts with each existential theme at the forefront of the researcher's mind. Relevant passages were extracted from the transcripts and grouped together with each existential theme as a heading. Passages were then re-read to explore the meaning within the words and the relation to the existential focus.

Illumination

This phase of the research process could be summarised in Husserl's famous words 'to the things themselves' (Heidegger 1962, p. 26). This phase illuminates the phenomenon and facilitates an understanding of what it is like to work as a nurse in the ED during a disaster response. As has previously been pointed out, the lived experience is a pre reflective moment. We can never be in that moment again because as soon as it has happened it has passed. We use language to convey that

moment to others and explain it to them with the aim to have that moment resonate with the reader as entirely plausible. It is not necessary, or indeed possible given the pre reflective aspect of the lived experience to present a factual description of the lived experience. What we are interested in generating is the plausibility of the human experience (van Manen 2014).

The Vocative

This stage of the research process is designated by the writing up of the research findings. This process is referred to as the 'Vocative' or 'Hermeneutic Phenomenological writing' and is the process of creating a text that is a thick description accurately capturing and communicating the meaning of the lived experience for the informants being studied (van Manen 1997; Cohen 2000; van Manen 2014). Thus the creation is a piece of work, that elicits a sense of understanding in the person who hasn't had the experience and recognition in someone who has, the piece of writing needs to resonate with the reader. van Manen believes this to be the most challenging dimension of the phenomenological inquiry process (van Manen 2014, p. 240). The challenge lies with systematically exploring the meaning structures of the phenomenon while finding expressive means to penetrate and stir up the pre reflective substrates of the experience (van Manen 2014, p. 240). Following on from thematic analysis and existential reflection the process of phenomenological writing began to occur as a means to present the data to the reader. The approaches used to present the data are discussed below.

The evocative method

Explicit themes that emerged through a thematic analysis of the data are described in the next chapter as *Moments of Disaster Response*. These moments are like snapshots of disaster response that were common in the participant experience. In this context the evocative method of writing allows the text to speak to the reader inducing a sense of nearness and intimacy with the phenomena and facilitating an understanding of what it is like to work in the ED during a disaster response (van Manen 1024, p. 249).

The invocative method

Using the invocative method of writing the researcher invokes the power of language to paint an image enabling the reader to experience the phenomenon (van Manen 2014, p. 261). The anecdote is a narrative device that is concrete and taken from life (in a fictional or real sense) and that may be offered as an example in a phenomenological sense (van Manen 2014, p. 250). Whether entirely imagined or purely fictional, this does not matter as long as it is a plausible experiential account, then that means the events may have happened more or less like this (van Manen 2014, p. 245). The aim of the anecdote is to draw the reader in to the experience and generate within them a strong feeling of the experience. The narrative account of what it might be like to work as a nurse in the ED during a disaster response is presented at the end of Chapter Five. The narrative is carefully thought out, incorporating all themes and aspects common to the participant's experiences. The wording is emotive and exact so as to draw the reader in to the experience so that an image is created in their mind's eye. The exact context, such as the type of event, the gender and role of the nurse and the geographic location have not been included, so as to create a narrative that will resonate with the reader.

The convocative method

The aim of the convocative method of writing is to encourage the text to speak to the reader. Rather than extract themes from the data as was done through the thematic analysis, reflection on the data through a lifeworld existential lens occurred within existing themes of relationality, corporeality, spatiality, temporality and materiality. Doing this brings forward a pathic understanding of the experience, meaning that we can understand the experience from an emotive, rather than a cognitive aspect. The pathic dimension resides within us, inherent in our body, in our relations and in the things around us, making it difficult to capture in conceptualisations and theoretical representations (van Manen 2014, p. 270). The aim of the discussion of the lifeworld existentials in Chapter Six is to evoke a sense of understanding of the experience through the participant narrative.

Summary

This chapter demonstrated how the research process aligns with the philosophy of Hermeneutic Phenomenology to allow the phenomena to be uncovered through the voices of nurses who have worked in the ED during a disaster response. The research process is presented in this chapters as four non-linear phases; *seeking* which clarifies the worldview of the researcher and the research question, *determining* which identifies the tools that are required to answer the question, *generating knowledge* and *interpreting* the dual process of accessing and analysing the data and *illumination* which is how the phenomenon will be uncovered. In the next two chapters the experiences of the nurses who participated in this research will manifest as lived experience and anecdotal descriptions.

CHAPTER FIVE: MOMENTS OF DISASTER RESPONSE

Chapter Overview

The previous two chapters describe in detail the path followed to collect and analyse the data as well as the methodological insights that underpin the research process. Analysis of the data led to two different perspectives on the research findings. The first perspective to be presented in this chapter is the *Moments of Disaster Response* which emerged from a thematic analysis of the data. An evocative method of writing is utilised to present the findings of the research as five moments of disaster response; *notification, waiting, patient arrival, caring for patients* and *reflection*. Each of these moments describe the collective experience of nurses who participated in this research. This chapter concludes with a description of the lived experience of nursing in the ED during a disaster which is based on the participant descriptions that were presented through the moments of disaster response.

The second perspective on the research findings which will be presented in Chapter Six is *Life Existentials*. The existential aspect emerged through a guided reflection of the data and allows the phenomenon to show itself in a different way than the *Moments of Disaster Response* by contextualising the experience within the world we live in. The existential aspect of the findings lifts the descriptive aspect of the data that are presented in this chapter and aligns it with the theoretical constructs of Hermeneutic Phenomenology by exploring the meaning within the experience.

Moments

'In the end we will not remember the years we spent in nursing. We will only remember the moments' (Donahue 1996, p. 473). These words by Patricia Donahue sum up the relevance of this aspect of the findings. In our careers, as in our lives, time passes as moments. For the most part time passes. Much of it is skimmed over and lost to our memory because it is not unique. Triaging a patient for example is not a unique experience for me because I have done it many times throughout my

career. The first time I triaged however stands out in my mind as a unique moment in my career. In that moment I was doing something that I had aspired to do since I first started working as an emergency nurse. It was something that only the senior nurses in the ED were permitted to do and I felt a sense of achievement as I finally made it to the desk at the front of the ED where the triage nurse in our department sat. Sitting on the chair surveying the waiting room in front of me suddenly, in my mind, I was elevated to senior nurse status and I felt so proud. I have had many moments like this during my career, moments that have stood out and acted as signposts along the path I have followed.

When we relate this concept to the experience of nursing in the ED during a disaster response, almost certainly, the experience of participating in a disaster response would stand out as a defining moment in one's nursing career, particularly if it was unprecedented in that individual's career. While on one hand much of the time within that experience would pass as it would ordinarily; as similar to the everyday and therefore familiar to the person experiencing it. On the other hand, moments within the experience would stand out as unique, thus defining the experience. In this research these *Moments of Disaster Response* emerged as they were experienced by nurses who participated in the research. They emerged as the moment a nurse finds out that the ED would be receiving casualties (*notification*), the moment of waiting for the patients to arrive (*waiting*), the moment a nurse experienced the arrival of the first patient to the ED (*patient arrival*), the moment of caring for people affected by the disaster (*caring for patients*) and the moment the disaster response comes to an end (*reflection*). Although experienced by the individual nurse these moments are common to the experience of nursing in the ED during a disaster response.

Each moment represents an explicit theme that emerged from the data. The remainder of this chapter is presented under the headings of the five moments of disaster response. Each individual moment is drawn from a thematic analysis of the participant experience and begins with excerpts of the participants' own words which exemplify the moment. This is an evocative method of writing aimed at

drawing the reader into the moment and creating a sense of nearness with the participant experiences.

Notification

> *We knew about it from the news. There was a blackout news that informed about a blast injury – a blast event in the old area – in an old bus station. This came through the news. The other event, we heard the 'bang' because it was near the hospital. So, even before the news updated us, we already heard some rumours of people who came and said there was a blast. We were not updated with all the information but we knew that there is an event (Participant 2 – terror attack).*
>
> *We just got a call to say that there had been this incident a warning that there had been an event that has potential mass casualties. So we then had a TV in our nurse's/medical desk. So we put the TV on so that we could watch the live coverage of what was happening. And we were getting regular updates off the phone from the Ambulance so that we knew where they were at and what was happening. We then got word that we did need to go into a code brown and from there; I just remember it being announced over the PA [Public Address] (Participant 3 - bushfire).*
>
> *The patient comes not by ambulance (Participant 5 – terror attack).*
>
> *Our first notification actually was the news, the breaking news that came on in the waiting area, believe it or not. And then, my second notification came from some of my colleagues that were still working on the course, on the marathon course that actually communicated directly with me via phone. Both notifications came not via our usual disaster radio frequency (Participant 7 – terror attack).*
>
> *We actually found out about it on the news. They had a breaking news story on the 12 o'clock news of a chemical spill at a disposal plant and we received just a generalised call that "You might be getting patients. We're not quite sure yet." And it quickly progressed to – "You are getting patients." (Participant 8 – chemical spill).*
>
> *At first we saw it on social media that there had been a shootout and there had been many casualties and then a few minutes later, our public address system said that we should be ready to receive some victims (Participant 10 – terror attack).*

These words describe the moment nurses learnt that an event had taken place that could result in ill or injured patients presenting to the ED. In the excerpts above nurses describe a number of different sources through which they receive notification of the event. These include existing communication networks such as a telephone call from the pre hospital emergency services or hospital management as

well as non-official communication routes such as mainstream and social media and patients arriving to the ED. Commonly, as described in the descriptions above notification often occurred through non official sources such as media reports or firsthand experience of hearing the event occur such as an explosion.

In more insidious events such as bushfires or pandemics, notification as such, may not occur. In the following excerpt a participant describes a focus on preparing for a bushfire disaster which was developing in the surrounding community and an ignorance regarding the impact of the preceding heatwave:

> *I feel we got adequate warning from the CFA [Country Fire Authority] on the news every day he [fire commander] had his face up there saying this is an extreme day this is off our scale but we didn't understand the extent of that really we were already feeling the impact of that heatwave prior…We had the big heatwave and some of the stuff that was coming by triage was quite unusual and we just thought it was, you know we really hadn't acknowledged it very well. We just thought it was busier than usual and not acknowledged at that stage any heat related illnesses coming through (Participant 1 - bushfire).*

Following initial notification, nurses acknowledge how they feel:

> *"What? Do we really have to evacuate?" It's like that whole – "You're kidding. There's been nothing!" that whole play-it-down, tone-it-down sort of thing (Participant 4 – evacuation).*
>
> *At that time, I just – I don't believe it's really happened. Sometimes, there's people like joking. I didn't believe this could happen. I just come there and when I arrived at the parking area, "Oh. What's happened is true" (Participant 5 – terror attack).*
>
> *It's just disbelief. I think you think, "Geez, that can't happen, not where we live. These things don't happen" (Participant 9 – terror attack).*
>
> *I'm feeling shocked and I don't know what to do (Participant 12 – terror attack).*

It is evident from the words above that immediately following notification of the event nurses are not only struggling to understand what has occurred they are disbelieving that such an event has occurred in their community. Emerging clearly through the statements above is a sense of shock and disbelief from the nurses. Despite this, there was no discussion among participants as to whether they made a

conscious decision to stay and participate in the response or leave the ED. It seems to be assumed by nurses that they will participate.

Directly after learning of the event nurses are faced with the decision of whether to participate in the response or not. Nurses who were at home when they were first notified of the event describe a need to get to the ED to help regardless of what they were doing at the time:

> *I didn't live that far away; it's only like – took me 15 minutes to get to work. But because of all the landslides it was just hard to get there with all the water over the roads and everywhere…I didn't think about not going to work. It was "can I get to work and then can I get home?" (Participant 4 - flooding).*
>
> *And then I come directly to the hospital and in front of the hospital, there are what we call like race of ambulance. Ambulance come and go. I didn't believe it happened in my hospital and then I just come there. I didn't even wear my uniform. I just wore my informal clothes and then I just come there and after that, there are many patient there (Participant 5 - terror attack).*
>
> *I just look at the television. I just come there directly. Fortunately, I lived close. I even got married at that time. I left my family and I left my children. Just stay at home, I go by motorcycle. It's close. It's about maybe five minutes (Participant 5 – terror attack).*

In another example a participant who was on her way to church to give a presentation describes cancelling her presentation because she believed her duty at that moment was to help with the response:

> *So I had to call the church and tell them "Guys I am sorry I know I was to participate in giving a talk to the audience but my first line of duty is to be at the emergency" (Participant 13 – terror attack).*

In all of these excerpts a sense of duty and dedication is demonstrated by the nurses. From reading the words above one gets a sense that very little thought is behind the decision to respond and the need to be present at the ED is immediate. What is also evident from these excerpts is that within this decision making process none of the participants appear to confirm the report with the hospital or their line manager to determine if their presence or help is actually required.

Nurses who had recently finished their shift in the ED also describe a desire to go back into the ED to help with the response:

> *I was actually on my way out the door. My shift was over actually; it happened at the change of shift and I was leaving and the initial notification that we heard on the radio was that there was an explosion; there were some casualties, and they were transporting. And I walked out the door and got in my car, and there were multiple ambulances that showed up. So I got out of my car and went back inside because it appeared that it was much more significant than that initial transmission that came on the radio that I heard (Participant 7 - explosion).*

> *At that time, it was about eight am in the morning. I was about to leave, but because of it – I stayed in the hospital until everything settled down (Participant 11 –transport incident).*

Again, in the words above, there appears to be no discussion by nurses with hospital administration or line managers to determine if their presence is required. This highlights an area for further exploration which was not specifically explored or elaborated on in the research process.

The moment of notification describes the experience of nurses as they received initial notification that an event had occurred that had the potential to send large numbers of patients to the ED. From the discussion above it is evident that notification occurs through a number of different sources and often from more than one source simultaneously or in quick succession. Traditional methods of notifying the ED that an event had occurred such as through hospital administration or the designated hospital disaster coordinator were less commonly discussed by participants than notification through the media or patients arriving to the ED. This is not surprising in today's world where information is generated and disseminated almost instantaneously.

Also in this moment nurses described an initial feeling of shock and disbelief at the news they had received. These reactions occurred regardless of the type of event, whether it was something difficult to anticipate such as a terror event, or a known risk such as an earthquake in an earthquake prone region. Immediately following notification nurses are faced with the decision to respond or not. This research

describes the experiences of nurses who did decide to respond, so it is unknown whether nurses in this moment decide not to respond and what their reasoning for that decision might be. However, in the context of this research nurses appear to make an immediate decision, driven largely by a sense of duty, to participate in the response. Furthermore, there is no evidence that nurses discuss this decision with their line manager to determine if their presence is required.

Waiting

> *I had a lot of different thoughts running through my brain at the same time. One of them was fear. Just because I knew that we weren't adequately prepared to take care of what was coming in. We didn't have enough staff. We didn't have enough trained staff. We didn't have enough capabilities to take care of the potential of it. And we really didn't know the scope and size of the incident…For me, fear was probably the biggest thing (Participant 8 – chemical spill).*

> *Everyone was now alert and were worried. At this point the first feeling was that of fear…In this time, what I was thinking is how – like I had said, there was the initial fear if we could actually handle this and then my first time to really handle a big, big, big incident like that. It was this picture of blood all over, people screaming, lives needing to be saved immediately. There was a feeling of unexpected feeling. You feel or you don't know how the hour would come or if they – we weren't sure how many lives we could actually save (Participant 10 – terror attack).*

The words above describe what nurses are thinking as they wait for patients to present to the ED following the disaster event. A common thread in the statements above is a feeling of fear among nurses. Fear appears to be related to a number of factors including a belief that the ED and staff were ill prepared to manage the event, not knowing what to expect, having had no previous experience with disaster response and anticipating the worst. Not knowing what to expect or anticipating the worst was described by other nurses in this moment:

> *There is a level of not knowing what to expect in terms of patient presentation (Participant 3 – bushfire).*

> *It is a bit scary. It's a bit – the anticipation of, I guess, a bit of excitement that something different is happening. Something unusual but it's also that the anticipation's scary part about, "Oh, we can't be able to cope with this." And thinking about resources and are you ready and, you know (Participant 4 - flooding).*

> *You're feeling the anticipation that we could get a lot of bad, sick, injured patients with lacerations and cuts and, because of all the debris (Participant 4 - flooding)*
>
> *We didn't actually know that we could actually manage it because the way it was portrayed was this massive thing and massive casualties (Participant 10 – terror attack).*

These examples suggest that nurses had limited insight into what the experience would be like. Not knowing what the experience will be like appears to create feelings of questioning uncertainty and panic as described by the following participants:

> *I was feeling nervous about how would we manage the surge capacity of all this (Participant 1 - bushfire).*
>
> *Are we going to be able to save them? (Participant 3 – rail disaster).*
>
> *It's that bit of panic of so how are we going to get all the patients out of the department…Initially, I don't think it was about what patients we may be seeing, in terms of what their injuries and the nature of that may be, but more around how were we going to vacate the department in order to be able to receive a potentially large number of patients in a short space of time (Participant 3 – rail disaster).*
>
> *I guess the adrenaline starts pumping and you think, "Okay, what do I have to do to get ready? Am I ready for this? Is the department ready for this? "And depending on what role you play within the department, it would depend on how big that impact is on the day (Participant 4 - flooding).*
>
> *So the first thing that crossed my mind was "Can we actually handle this?" (Participant 10 – terror attack).*

It is apparent from the excerpts above that as soon as nurses learn of an event they immediately begin to think ahead to 'what will it be like', 'what sort of things will I do'? For nurses who have previously responded to a disaster event though this moment may bring back memories of previous events. This is illustrated in the participant excerpts below as they describe re-living the smells, sounds, sights and remember patients they have cared for in past disaster responses:

> *Before the first patient enters the emergency department, I smell them. I smell the smoke, I smell the burning bodies. This is my frequency. It comes back. My experiences come back. It does not bother me in my daily function. But when I heard about disaster and I heard about mass event, I already in the same moment start feeling the same smell of burned bodies. The*

> *smoke. And I know that this is my reaction to this (Participant 2 – terror attack).*
>
> *I remember the first bomb. It's very bad. There were many patients, I think about this, and I still remember that one patient and their family. The experience comes to my mind at times (Participant 5 - terror attack)*

In this moment nurses describe feeling nervous, anxious, worried, scared, fearful, alert and anticipatory. These feelings are largely attributed to uncertainty and speculation around whether there is enough staff to manage the event, whether staff training has been appropriate, whether more information about the event is required, whether there is enough space to treat people affected by the event, whether they can save all the people affected by the event, whether they will be able to discharge all the existing pre-event patients out of the ED, what roles they will be engaged in and a general concern related to the ability of the individual to cope and the ED to manage the response. This internal dialogue is also an indication that they are preparing for the worst case scenario. The uncertainty and anticipation that is central to this moment implies that nurses were unfamiliar with what disaster response would be like. Although the majority of participants appeared uncertain, some nurses who have previously participated in disaster response experienced flashbacks. There is a sense that nurses are recalling negative memories such as the smell of burning flesh and the volume of patients. The effect of this could potentially place nurses in a negative mindset at the commencement of the response.

Patient Arrival

> *There was so much noise, people yelling, "Get me this. Get me that" (Participant 9 – mass shooting).*
>
> *They were coming – so many of them at the same time. It was challenging too – who do you go to first because at first sight, everyone needs your attention, but there is this one who will come all screaming and bloody. You feel sorry for them. There is that one who is not screaming and much less bloody and only for you to realise, they're actually more in critical condition than the other one and that was a bit difficult (Participant 10 – terror attack).*

> *At the beginning, it was really chaotic. Everyone was shouting… I would say the atmosphere was at first very hectic and noisy (Participant 10 – terror attack).*
>
> *I see something very, very bad, about bodies there was no extremities, or without arms, without heads, that makes me wish to cry about this. It is my first experience in my life about how to deal with a disaster (Participant 12 – terror attack).*

The descriptions above from nurses who participated in this research describe what happens when patients begin arriving to the ED after a disaster. This moment is characterised by chaos which is described as noise, yelling, screaming and shouting, a surge of patient arrivals, uncertainty related to which patients to treat first and significant traumatic injuries. It is easy to see that this moment is not only confronting but also challenging for nurses.

The participant excerpts above however, describe terror attacks. In more insidious events such as flooding or bushfire, participants describe the arrival of patients as being less dramatic:

> *I remember they were saying that they thought they were just going to get a mass influx of burns patients, but it actually didn't occur…I remember coming on and it felt eerie in that it actually felt quiet in the department. But, you know, the patients that we did have in the department were patients who were stabilised at that time. You know, yes, we still had patients who were being choppered in when, you know, with significant injuries from time to time, but no mass influx when I actually started my shift (Participant 3 – bushfire).*
>
> *I was just amazed it was so quiet. I mean, you could probably count on one hand the amount of people we triaged. It was that eerily quiet…Well, there were deaths happening in the town and out of town. And obviously, they declared it some kind of National whatever. But I feel like it didn't really impact us because the hospital was so cut off for such a long time. I mean, I knew it was a disaster area, but it wasn't a disaster for the hospital, if you know what I mean? The hospital was fine; it was ready to go and fully functioning. There's just – no patients could get to us (Participant 4 – flooding).*
>
> *It's that whole anticipation living on adrenaline kind of thing. What's going to be happening and then nothing happens (Participant 4 – flooding).*

Whereas mass casualty events seem to create much chaos and noise, in more insidious events the ED is enveloped by an almost eerie quietness. This is because

the ED has been emptied in preparation to receive patients from the disaster, but very few arrive. This experience is equally foreign for nurses who are used to the bustling and busy environment that is usually characteristic of the ED.

Caring for Patients

> *Once identifying that the patient was presenting very similar to patients that we see every day, there was almost a sense of relief (Participant 3 – rail disaster).*
>
> *I just remember giving out a lot of tetanus shots in that time, which isn't big, traumatic stuff at ED. It's a tetanus shot, and they're gone. So it wasn't anything major. I guess they geared us up that we were getting a lot of stuff in, and we just didn't. We just got a few people in that were really sick, and that's it (Participant 4 - flooding).*
>
> *And so, what we do is just normal things, the same thing that we do in the emergency room (Participant 6 – earthquake/tsunami).*
>
> *After fear, as ER nurses, you work in this environment every day so you learn to adapt and you learn to think on your feet and that's what I started to do. I started to adapt things. I started to think on my feet. Started to basically work with the resources that I had at the moment and it kind of worked out okay in the end, luckily (Participant 8 – chemical spill).*
>
> *We implemented procedures that we do day in and day out. So it was just sort of ramping up core business. It wasn't learning a new skill or a new technique under pressure. It was just something a little bit faster. We had systems in place. Systems and processes in place that work every day and we just implemented a normal routine (Participant 9 – transport incident).*
>
> *Most of the things were more I would call classical ED…the main things we did was actually arresting the bleeding because most of the patients who presented, they were already bleeding profusely so our main role was to secure the injured parts, make sure there's less bleeding. Others we'd do the suturing like you have to stitch them up, a temporary one, then you give the pain medication. Mostly now the narcotics and those we felt had lost too much blood, we would put IV fluids (Participant 10 – mass shooting).*

These excerpts hint at a readiness for something significant and then a feeling of relief as the work that is required of nurses was familiar to them. This again implies minimal prior understanding of what the experience would be like. While the excerpts above imply that much of the work in the ED during a disaster is similar to a non-disaster day, there are aspects of caring for patients during a disaster that are

less familiar and therefore more challenging. This is described by participants below in relation to the sheer volume of patients that arrived in a short period of time:

> *The maximum amount of injures they have in the emergency department was about 120 injured which arrived in the emergency department within about two hours. This is a lot (Participant 2 – terror attack).*
>
> *The injuries itself which we have during one hour, we observed to our emergency department about 60 injured (Participant 2 – terror attack).*
>
> *On average, we see around 200 patients a day…About two hundred, but they are scattered all over throughout the time, the 24 hours, so you may not feel the pressure that time and mainly, they are very minor illnesses…At the time [of the disaster] we had registered almost 270 patients (Participant 10 – terror attack).*

Participants also describe the challenges associated with the severity of injuries in patients who presented to the ED:

> *And among them, there were about seven critically injured which obviously creates an overload situation, which means that you – that you spend most of your resources, you're personnel resources to those injuries (Participant 2 – terror attack).*

Challenges were also associated with caring for young patients and patients with burns injuries:

> *And the other thing that made it very difficult is because of most of them were really young. It was one of the most – I think for me and for most of the nurses that I work with, they're one of the most difficult situations to deal with (Participant 2 – terror attack).*
>
> *Also the patients that were coming in, you know, burn injuries, I think, also tend to be far more horrific depending on when they are and just how quickly the patients go downhill with, you know, significant burns. So I think that was somewhat overwhelming (Participant 3 – bushfire).*
>
> *What we did get was the sickest of the sick burn patients. So I think in some ways we felt a little unprepared for that because they were expecting that it would be sheer volume, but not necessarily as unwell as what patients were (Participant 3 – bushfire)*
>
> *The kind of severity of the patient is different than we have. Most of the patients at that time is burns. We don't have an experience to handle the burn patient…we have seen a burn patient, but it's not because of a bomb explosion. We just have for example, like hot water maybe (Participant 5 – terror attack).*

As they care for patients nurses involved in this research describe an intense focus on what they are doing:

> *When disaster occurs, mostly I'd be silent. I don't allow myself to feel during the disaster. During the event, I'm very calm and very strict to what I have to do. If I move during that time to what I call "automatic pilot" and leave my emotion out of there, this is not a disaster. The situation might be very difficult to handle. But as long as I do not involve my private emotions, I can handle the situation. I say, "Now you are dealing with problem. Now you have to set the rules, now you have to provide the knowledge, the management, whatever it is." And this is my way to handle the situation, otherwise I would sit in the corner and cry. So I start acting in very professional way and not in a personal point of view. It is not until I get home and then I try to process the situation. This is when I allow myself to feel, to switch the switch again (Participant 2 – terror attack).*

The excerpt from the nurse above describes a conscious effort to dampen emotions so they don't get in the way of pursuing the task. The nurse also describes 'acting' in a professional way, indicating that her behaviour has altered because of the situation. Other participants describe an intense focus on what they are doing to the point that they forget to take a break or consider what is going on at home:

> *I didn't eat. I didn't drink. I felt strong. I didn't have time to break and the thing I still remember now, one of my chief asked me, "Please eat." This is four in the morning. "You can take a rest". I hadn't thought about having a break up until that point. I didn't worry about anything. Just do whatever I can. Actually, I'm pretty strong at that time, but at four in the morning, I feel, "Oh!" (Participant 5 - bombing).*

> *We just tried to understand it and then very focused on them. We feel very powerful. We don't eat. No one offered drink. No drink. Who prepare it? No one can prepare that (participant 5 – terror attack).*

> *I just focus in – I didn't worry about outside. I just focused (Participant 5 – terror attack).*

> *And to be perfectly honest with you, I probably thought about them [family] for about a second and then 900 other things just bombed in at the same time (Participant 8 – chemical spill).*

> *I completely didn't think about home at all, not even one minute. I guess because it was so overwhelming (Participant 10 – terror attack).*

The participant excerpts above illustrate how nurses neglect their own basic needs such as having a refreshment or sanitary break. The excerpt below however,

demonstrates how getting caught up in the moment can be to the detriment of the nurse's own wellbeing:

> *I actually stayed in my suit for almost an hour which was 30 minutes longer than I should've, but there was nobody left. So I did what I had to do. As most ER nurses do, you kind of just roll with it. It wasn't the most comfortable thing in the world. I could tell you. And as that last patient came through, and there were no more patients for us to do that were non-ambulatory, I then had to self-decon myself to get out of my suit, and then I think that's the last thing I remember for about 15 or 20 minutes and I woke up with ice bags on my head and shoulders. So as soon as I drank my eight bottles of water and I could take the ice bags off my head, I went back outside (Participant 8 – chemical spill).*

Central to this behaviour is a desire to help people affected by the disaster which is illustrated through the following participant excerpts:

> *I didn't really think about it much at that time because I was so busy concentrating on getting this guy stable (Participant 4 – evacuation).*
>
> *At that time, I feel I am very powerful and very focused – I really want to help. (Participant 5 - bombing).*
>
> *I help people without any decision just as I see them and try to help them as possible…we try to help people. I think it is my priority to do that…I try to help as I can (Participant 12 – terror attack).*

This moment demonstrates that in the experience of nurses who participated in the research many of the patient presentations, and therefore the work that nurses do during a disaster is much the same as a non-disaster day in the ED. However in the experience of these nurses there are aspects of caring for patients during a disaster which create challenges such as the volume and severity of patients, patients with burns injuries and caring for young children. Central to this moment is a strong desire within nurses to help patients while disregarding their own needs.

Reflection

> *When I came home I was crying really... I crying on the children, I was crying on myself that needed to be there to provide the medical care to a [terrorist] – so it was the one who create so much damages on my people (Participant 2 – terror attack).*

The participant above describes returning home after participating in a disaster response. Where previously this participant described consciously turning off her emotions during the response (p. 97), now she allows herself to feel again. In doing so she experiences an outpouring of emotion related to her experience during the disaster response. This is in sharp contrast to the nurse below who after participation in the disaster response feels numb and devoid of emotion:

> *At the time, I was – I can't think anything. I talked to my friend in the ambulance about why Bali can have a bomb again and then we talked together, but we didn't talk so deeply because – I don't know. I can't say anything at that time. I can't think. I didn't think too much, just go home directly (Participant 5 – terror attack).*

Once the response is over nurses further reflect on their experience in relation to factors they attributed to making them feel more prepared or confident during the response:

> *To not only just being prepared but how well people's plan and training provided them the skills to actually work in that environment. I mean, we do multiple, multiple MCI drills and exercises. So I think that that not only coordinated with the city and collaborating with the city on some of those exercises – I think that it did provide people a good base on what to expect, how to kind of work together (Participant 7 – terror attack).*

> *It was very calm. There was a team leader that didn't take on patient care and they just sort of entered the bed directly like a typical trauma, you know, how's the airway, how's the breathing, how's the circulation, so everybody had clear roles (Participant 9 – transport incident).*

The nurses above attribute feeling more prepared and having a clearer expectation of what to expect because they had clear plans or have experience through multiple disaster drills and exercises. Similarly previous disaster response experience, or experience managing trauma that is likely to be seen in mass casualty events is also attributed to feeling more prepared:

> *Because we already have system and the scope of disaster is smaller than the first one, there are not many patient come to ED because we can manage properly (Participant 5 – terror attack).*

> *Because all the time in our institution, we've seen gunshot patients. We've seen road accident patients. We see those kind of injuries all the time here. Barely would the day end without seeing such critical patients. I think*

> *having that in mind made us truly prepared; I think it was more similar situation that made me more prepared (Participant 10 – terror attack).*
>
> *It was in a good hospital. Also, my background when I was in that accident, I spent one year in other departments or most of the routine thing, I dealt with it. For a nurse, it has to be once or twice to the ER to know more skills about seeing how to deal with the situation…I'm not scared, there is a more competent person. They will do what they have to do (Participant 11 – transport incident).*

Other factors which contributed to a feeling of being prepared were associated with having time to prepare between notification and patient arrival or simply good timing in terms of the time of day and the number of staff present in the ED at the time:

> *We were lucky that we weren't already overwhelmed. Like, eighty-forty or at nine o'clock in the morning is a reasonable time for us. About eleven o'clock in the morning, things start to go belly up. So it couldn't have really happened at a better time because we had a full component of morning staff. We did have a few empty beds, which was most unlike our department, so it worked well. So I think the good thing was we had plenty of staff and we had people that knew what they were doing (Participant 9 – transport incident).*
>
> *And my walk through the acute part of the – what's called our acute section – [was] very unbelievably organised. Believe it or not, they had already established teams, and teams were standing directly outside the patient rooms. So as much as it seemed chaotic, it still appeared very organised (Participant 7 – terror attack).*
>
> *It found us very prepared for it because in as much as there was short notice, I had mentioned the first victims went to the nearest hospital so by the time the others were arriving [to] us – we were really prepared for it (Participant 10 – terror attack).*

Factors that nurses in this research attributed to enhancing their own preparedness and therefore confidence related to perceived experience and preparedness of the organisation and the individual. Organisational preparedness was discussed in terms of whether or not the organisation had a functional disaster plan, systems in place and frequent drills and exercises. Organisational experience referred to the ED experience of managing trauma patients similar to what presented to the ED during the disaster. In regards to individual preparedness the relevancy of staff training and experience related to the seniority and years of experience of nurses.

Other factors such as having time to prepare for the influx of patients and having a relatively empty ED at the point of notification also enhanced confidence among nurses. Conversely, nurses involved in this research attributed a deficit in any of these factors as cause for diminished confidence. For example, the statement from the nurse below describes an organisational complacency which is related to having no previous experience with disaster response:

> *We never think that we will have a disaster like that. And then we didn't prepare for the resources. We don't have a system. That's the big problem. We don't have a back-up planning for the human resources. We just come and did what we can…Because we are limited resources and limited anything, we get frantic and finally, our hospital called the closest hospital and then called the doctor who are not on shift, the nurses. But it took time because we're not prepared for that (Participant 5 – terror attack).*

The participant excerpt below illustrates how no previous disaster response experience coupled with unpractised disaster plans, can lead to errors that can have potential ill effects for staff participating in disaster response:

> *We had never worked in an actual event. We had trained in it. So I can tell you that the suits are very hot. This event happened in August, so summer. So it was 96 degrees [Fahrenheit] outside – Hot. Humid, hot. There was 90 percent humidity and we were standing outside on a black coal parking lot wearing non-permeable suits that don't breathe and a hood. So of the five people that were actually working that day, the first person passed out in the tent after about ten minutes from the heat. And then, the second person dropped after about 20 minutes which left us with three. So we pretty much – I got through the nine ambulatory patients and then we all had to get out of the suits because they were very, very warm. They're very cumbersome. They're huge. They have sealed joints. There's really no breathability to them. They're chemical resistant. They're splash resistant and they don't breathe…So what we found was we had five people trained, but they had never done it in an actual scenario, actually outside. They had put the suits on in ambient temperature, in an air conditioned room. So when they found out that this was going to be a live event, they all got dressed, but at the temperature that it was, you can only stay in that suit for about 30 minutes. So before the first patients arrived, I had people dressed in suits for 20 minutes already, just kind of standing around in the hot sun, baking. So at the time that the actual incident started when the bus rolled up, these people were already 20, 25 minutes into that 30 minutes in the suit. So as they started to do things, and they started to super heat, after ten or 15 minutes, they were done. They were baked (Participant 8 – chemical spill).*

Similarly, chaos can ensue when plans are non-existent, unpractised or irrelevant, as described by the participants below:

> *Because it was a gradual onset we weren't prepared for that our plans were only written for a huge impact all at once, because the heatwave was 3 or 4 days prior we were already falling over (Participant 1 – bushfire).*

> *The problem was trauma teams didn't exist, there were no systems, no processes, no plans. It was just chaos. I just remember thinking, "Shoot, does anybody know what they're doing?" And ideally, you'd have a doctor and a nurse for each acute or critically injured patient, if not one doctor or two doctors and two nurses depending on the nature of the injuries and what I saw in that case in the eighties was just a lot of chaos…And I remember going down to ED and it just looked - there were people everywhere. It's just chaos. You couldn't move. I don't think we really knew what we were doing. I don't think we really had a process in place. Like I said, we didn't have trauma teams. I think it was just a nurse and a doctor to each patient. Do your best to write down what you're doing. Do your best to find what you can find…that was just chaos. There was just people everywhere, you know, you have 50 people with hearing issues related to the bomb blast and once again, it was just chaotic like you don't have any clear leadership from a general manager perspective down to the next level, down to the ED…they may have been clear roles, but they weren't obvious to me (Participant 9 – mass shooting/explosion).*

The timing of the event can also have a significant impact on the ability of staff to manage. For example, events occurring after hours or during public holidays could mean that the hospital is running with less staff or fewer qualified staff as described by participants below:

> *It was during the holidays which means that most of the time during the holidays, the nurses are not in the hospital, the junior are working and of course, yes, we had a disaster. So, this is a regular day but it's much more challenging because we have less qualified personnel in the hospital (Participant 2 – terror attack).*

> *If you have all the right staff and all at the right time, we could manage. If you had the wrong staff, it was three o'clock in the morning and you had junior registrars, we would potentially struggle. And, you know, yourself, hospitals don't run 24 hours a day, seven days a week. It's a lot of rubbish. They work eight to five, Monday to Friday, including the public holiday with school holidays and Christmas and we're woefully under resourced (Participant 9 – transport incident).*

From the excerpts above it is evident that nurses felt underprepared during the response when they perceived a lack of preparedness. This is because existing plans

were not relevant to the event, the department was already overwhelmed when the disaster commenced, there was limited qualified staff, complacency with regards to preparedness and lack of experience through either disaster response or drills and exercises which simulate disaster response.

Also after the event had finished nurses reflect more generally on their experience and the impact their involvement in the disaster response has had on them. For example the participants below describe having flashbacks to the event:

> *I felt nothing, one or two days after that, I felt – I always listen to the sirens in my head, ambulance The sirens, Yeah – 'Weeo, weeo' And then whenever I heard the ambulance sirens, I feel like I start to remember and I don't know – Oh – What happened to myself?...I still remember at that time when I heard the ambulance – Yeah – I go, "What's happened?"(Participant 5 – terror attack).*

> *I don't think it affects me in daily life. But once I recall the situation, then I start talking, as you see me, I can't stop shedding tears so it means maybe, maybe I received some effect about that (Participant 6 – tsunami/earthquake).*

The following participants describe their participation in the disaster response as a career highlight:

> *I think it was a good experience, although it was a – it required so much giving and there were so much pain…I still remember it as to be one of the best days of my working career (Participant 10 – terror attack).*

> *Experiences like that, it's – what that means is nurses' experience. An experience like that that would shape the nurses' experience especially for me because I'm junior (Participant 11 – transport incident).*

While for others, the emotional impact of participation in disaster response is evident:

> *I didn't realise the severity of it really until the shift was over and I'm at home and you wake up the six o'clock in the morning and I was like, "Oh my God!" So well and truly after the fact, the significance and severity of it (Participant 1 – bushfire).*

> *I think in general it was an extremely emotional, draining event…So many, many, many emotional challenges after the incident (Participant 7 – terror attack).*

> *Maybe I passed two months of how to handle this life and how to live and go on with what I saw in my experience of this disaster (Participant 12 – terror attack).*

Evident in this moment is that nurses begin to engage with their emotions again after supressing their emotions during the response. This leads nurses to reflect on their experience, some are able to reflect immediately after the event, while others were numb and the enormity of the event took days to sink in. Also in this moment nurses begin to reflect on the meaning behind their involvement in the experience in terms of the emotional impact or a sense of pride at what they had achieved.

What is it like?

In considering the findings a narrative account of what it is like to work as a nurse in the ED was created. van Manen (2014, p. 240) describes the process of writing as a period where the researcher engages with the analysis and aims to express the noncognitive, ineffable and pathic aspects of meaning that belong to the phenomenon. The following description of working as a nurse in the ED during a disaster is free from context, such as the type of disaster event, geographical location or gender of the storyteller because the aim of this account is for any emergency nurse to read it and recognise it as a plausible account whether they have worked in a disaster or not.

Walking towards the tea room I start to feel something akin to excitement at the prospect of resting my feet for 15 minutes. It has been a busy morning. Nothing unusual; a steady stream of sick and injured people, with the occasional frequent flyer thrown in to the mix. I flop down on the couch and stare at the television in front of me, watching with no real interest, two hosts of a morning talk show chatting animatedly to each other. I take a sip of my coffee and close my eyes momentarily, conscious that my 15 minute break will be over barely before it started.

I am startled out of my reverie by a loud gasp. I turn my head in the direction of the gasp and re-focus my eyes on a colleague sitting on a chair beside me. Her face is

ashen, her mouth agape and her eyes open wide staring at the television screen in front of us. I am suddenly aware that the quiet chit chat of the tea room has stopped and a small crowd of people have gathered around the television. I redirect my gaze towards the centre of their attention, my own eyes widening, as images I have never before imagined in our town, play out on the screen. I am shocked, I find it hard to reconcile the images on the screen are happening right now in our community.

As if we are all connected by an invisible thread, we exit the tea room and disperse back into the ED. The noise level in the ED seems to have risen a notch and I can hear loud murmurings as the group in the tea room share their new found knowledge. The shrill ring of the 'bat phone' pierces the ED and I watch as a colleague reaches for the receiver with one hand and a pad of paper with the other. A small crowd of onlookers gather around him and jostle to see what he is writing on the pad. For the second time today I watch a colleague's mouth gape open, eyes widen and the colour of their face turn ashen. All around me, people are reaching into their pockets for their mobile phones, no doubt clarifying the news on social media. My stomach drops and I feel panic rising in my throat.

As I walk back to triage where I was working before I took my break I notice the beds full of patients and wonder, how are we going to cope? How are going to make room for more patients? My mind is racing. One of my colleagues walks up to me and asks if I have 'heard the news yet' and I share my fears with her. I have never been involved in a disaster before. I don't know what to do. How do you prepare for something you have never experienced before? My heart starts beating fast and I break out in a cold sweat. I can't quite put my finger on how I am feeling right now, a strange mix of excitement and anxiety.

Triage is a hive of activity. I watch as my colleague patiently informs people in the waiting room that they will have to leave the ED and visit their local doctor instead. As quickly as people leave the waiting room, it seems to fill up again with more people. I can see fear etched across the face of each and every one of them. My feet feel like they are stuck to the ground, there are so many people vying for attention,

everyone needs help and it is impossible to know who to go to first. I don't know where to start. I feel so helpless.

I pick a patient and start working. I feel focussed and strong as I move from one patient to another. I can see the relief in their eyes as I treat them, but I don't have time to really connect with them. For the first time in a long time I feel like I am doing proper nursing care, that I am putting my nursing skills and knowledge to good use. I feel myself relaxing slightly as I realise that I have seen all of these patients before, on a different day, under different circumstances. Their presentations are the same, but their faces and untold stories have changed. A feeling of pride surges up inside of me as I look around at my colleagues. All working so hard, all working towards a common goal. We are all bonded together in this experience.

Suddenly a man bursts through the ambulance doors, in his arms the limp body of a child, pale limbs dangling lifelessly. I have to help, this is what I am trained to do. As if a switch has flicked somewhere inside of me, I snap into action. I reach for a bed and motion for the man to place the child down. I push the bed towards my colleagues waiting in the resuscitation room. Crowding around the child we work silently to try and save her. We have all worked together before, we work seamlessly anticipating each other's needs almost before they are voiced. Everything around us fades away as if we are enclosed in our own tiny bubble, sharing the same purpose. I stare down at the young girl laying on the bed, I can feel the emotions bubbling up inside me as I estimate her age to be the same as that of my young niece. I take a deep breath. I need to focus.

The noise level around us picks up, outside of the resuscitation room the ED is heaving. I can see all sorts of people; new patients, their loved ones, nurses and doctors from other departments, the police, the media, important looking people in suits, too many people. I look back to the girl laying in front of me. Despite our efforts her colour hasn't changed, her breathing is barely perceptible and a bluish tinge shades her lips. Normally we would step our actions up a notch, but today the

ED outside of this tiny room has encroached on us in a way that it wouldn't normally if we were working on someone this sick. There are too many others that need our help, we know we can't save this one, this time. With heavy hearts and barely a spoken word we stop what we are doing. I say a silent prayer and move on to the next soul.

Moving from one patient to another I begin to realise that the atmosphere in the ED has shifted slightly. We are still busy, but the crowds have dispersed somewhat and the noise level has decreased. I start to feel more relaxed as I begin my assessment of the patient laying on the bed in front of me. Her eyes are glistening and a single tear rolls slowly down the side of her face. I reach for her hand and gently squeeze it between my own, as I do, her mouth opens and her story stumbles out. A hard lump registers in my throat as I try to hold my emotions back. I need to focus.

I feel a hand on my shoulder and the concerned voice of a colleague; 'have a break'. I take in the ED around me, now quiet and relatively empty of patients. Only the debris and the forlorn faces of my colleagues exist as a reminder of what has just happened here. I glance at the watch on my left hand, I am stunned to discover that so much time has passed.

I can't believe what has happened, this horrible, horrible thing. My thoughts go to the many who have been injured or even worse, killed. Ordinary people just like me, going about their everyday lives. I feel so sad for them. I feel so sad for the families who have lost a loved one today. My eyes prick with unshed tears and the lump in my throat expands threatening to burst forth to announce to the world how sad I feel.

As I walk out through the ambulance doors and in to the cold night air the emotion of the day washes over me. Visions of the day invade my mind. The young lady crying for her missing fiancé, the old man we could not save, the young child who now has no parents, the firefighter – our friend who may never work again, my colleagues who worked so hard and showed so much compassion. Did we do

enough? Did I do enough? Suddenly I feel tired, more than tired, I feel exhausted. Warm tears flow uninterrupted down my face as I begin my journey home.

Summary

Through an evocative method of writing this chapter presented the findings as five moments of disaster response which emerged through the participant's experiences. These included the moment nurses learnt that an event had occurred, as nurses waited for patients to present to the ED after the event, the moment patients arrived to the ED following an event, caring for people that have been affected by a disaster and reflection on their experience. Following the moments of disaster response an invocative method of writing is used to present a plausible narrative account of what it might be like to work as a nurse in the ED during a disaster response. A more thorough consideration of the meaning behind these descriptions is presented in Chapter Seven of this thesis while Chapter Six will explore the second perspective of the research findings, using five life existentials as a guide.

CHAPTER SIX: LIFE EXISTENTIALS

Chapter Overview

The previous chapter presented five moments of disaster response and a description of the lived experience of nursing in the ED during a disaster response. This chapter will dig deeper into the description to unravel the meaning within the experience. Through a guided reflection of five life existentials a different perspective of the findings emerged which will be presented in this chapter. According to van Manen (2014, p. 302 - 303) five fundamental existentials occur repeatedly throughout the literature as universal themes of life, belonging to every human's lifeworld. These themes; *relationality, corporeality, temporality, spatiality* and *materiality* provide another means through which meaning within the phenomenon can be explored (van Manen 2014, p. 303). The remainder of this chapter is presented under the headings of each of the life existentials. Again participant excerpts are used to contextualise the experience into an existing lifeworld.

Relationality

Relationality guides reflection to ask how self and others are experienced with respect to the phenomenon (van Manen 2014, p. 302). In the context of this research relationality explores how nurses in the ED connect or experience those around them during a disaster response. Participants described an influx of people into the ED which included patients, family members, the media and emergency services personnel.

> *So there are lots of security officer, there are lots of police officers who arrive to the hospital…So there are a lot of police officers. And a lot of family members who are in the hospital (Participant 2 – terror attacks).*

> *The front doors of the hospital obviously were closed off, and police were at the front entrance so no more cars could come in (Participant 4 – bomb scare).*

> *A lot of family and not only the patient. Yeah. The journalists come…We have many people, not only medical professionals, not only nursing, but sometimes students of nursing. (Participant 5 – terror attack).*

> *There were so many ambulances including the one that SWAT team for the police, so all ambulances in the countrywide regardless of which company, regardless of payment, they were just – they were made sure that they were carrying the patients to us free of charge, for nothing. (Participant 10 – terror attack).*

For the most part it seems that extra people in the ED are seen as an extension of the event and don't indicate any sort of relationality. Where a previous relationship or interaction with someone exists, additional people in the ED are no longer seen as an extension of the event, as described by the participant below who cared for emergency responders who were known to them.

> *It was hard because they were firefighters that we knew. Back then, the firefighters really influenced us. So it was – we were providing care for a group of colleagues that, although we didn't see them daily, they were known to us…So that was – it was difficult. It was very difficult that, for weeks and months afterwards, it was very, very difficult just because there was significant disabilities to both of the firefighters (Participant 7 – explosion).*

The exception to this is the interaction nurses had with their colleagues *(nurse/colleague)* and with the patients that presented to the ED *(nurse/patient)*. The interaction with these two groups betrays a much deeper connection as discussed below.

Nurse/Colleague

> *My immediate reaction to reach out and to make sure that my colleagues on the medical course were okay and what their needs were and kind of just assist them with what they needed to do (Participant 7 – terror attack).*

> *You know this feeling when you have all with your friends and your co-workers work beside you and help you if you need help and also, you share that feeling with them it's a great and amazing feeling (Participant 11 – transport incident).*

In the context of this research, participants used the words 'colleague' or 'co-worker' to refer not only to nursing colleagues, but to all of those who they commonly work with in the ED such as doctors and auxiliary staff. The following excerpts demonstrate strong bonds between nurses and their colleagues that exist prior to the disaster response.

> *They know you, you know them. When you ask for something, you get it. So having that established relationship because when we know each other, it's easy to talk…it made it easy to ask for things because they knew me and I knew them, so it's like that MOU, that memorandum of understanding. We've worked with each other before. We know each other is competent and good. When Jane asks something, I'll do my best to get it for her. That established relationship whereas for the two disasters in the 80s, the ED nurses that have been there for 30 years scared the bejeebers out of you because some of them were really quite cranky and quite rude…But when you don't know anybody, when you don't know what to do or where to get something to go up and ask somebody, who's gonna be cranky and frazzled 'cause they've got ten phones ringing at the same time, it's really hard…when I was a junior, I didn't know anybody. I didn't know who to ask for help (Participant 9 – transport incident/terror attack).*

> *We weren't that distressed because I was glad I know I had the two senior doctors on. I had the nurse unit manager who was very active in disaster meetings. Laura was on and she was the nurse unit manager who had a disaster portfolio and I was involved as well and then we have the two senior ED doctors who were very, very good at high-level negotiations, clearing out the department (Participant 9 – transport incident).*

The words above emphasise close bonds that existing close bonds strengthen nurses' confidence during the disaster response because there is comfort in knowing that they can rely on their colleagues or have the support of their colleagues. Existing working relationships therefore appear to strengthen the response. Existing collegial relationships also appear to be a motivating factor behind nurses' drive to respond, as illustrated in the excerpts below:

> *We called colleagues, even friends from home who physically do not even work here and then the other staff from other departments were mobilised…my friend, the one I know from outside – they could be working in other hospitals. They are licensed nurses or doctors. We would call them. All they needed to do is they come with an identification like they are licensed so we know it's a qualified personnel and later, most of them got a certificate for good work and participation in the disaster. But there wasn't anything financial motivation or anything. It was purely humanitarian grounds (Participant 10 – terror attack).*

> *One thing that remains very clear and I am forever in debt to the team in the emergency room, when I talk about it again I get a little bit emotional, I never called anyone for back up, my phone kept ringing, and they tell me 'we are on the way coming', 'we are on our way coming'. I am forever in debt to the team, especially the nursing team. People didn't want to take shifts to rest, people wanted to continue and continue, that was amazing (Participant 13 – terror attack).*

The existing bonds between colleagues and the motivation of nurses to be involved in the response contributes to a strong sense of teamwork and collegiality among the ED team as described by participants below:

> *There seems to be more cohesiveness and overall collegiality and teamwork that I observed. Everyone follows directions, in the way which communication occurs it's probably a lot more streamlined I don't know, I just felt that the staff in general just were more happy to take direction and just be guided for anything to do. So I feel like there was probably more collegiality and teamwork (Participant 3 – rail disaster).*
>
> *It just felt really supportive, and that there was some great teamwork going on. Everyone was just open to being aware of who was in charge and following the direction from whoever the person was that was in charge (Participant 3 – rail disaster).*
>
> *Then I was lucky because I connect to three members whom I already worked together before, in another mission, so – Yes. We be with each other and try to cheer up each other right. It was very good (Participant 6 – earthquake/tsunami).*
>
> *I mean, it was definitely a little stressful, but it seemed very structured. I would say that I was very happy that we had such detailed commands and actually had co-workers that were very knowledgeable on the plan and in their departmental response as well. So I think that was really important. There was a couple of social workers that are part of my federal team that deploy out in the field with me that I'm very comfortable working with, had a good working relationship with in regard to these type of situations. The emergency department liaison is somebody that I worked very closely with at a lot of emergency preparedness program and planning projects with. So really knowing who we were working with and kind of have an established relationship was very, very helpful (Participant 7 – terror attack).*
>
> *The interaction was really superb, even by looking at your colleague, they would know what you are asking for. There was so much connection and there was that teamwork. You didn't have to say much to communicate, everyone was almost at the same level in terms of what was being done. Absolute teamwork, everyone knew what needed to be done and there weren't any question asked, just saving lives and moving to the next. It was superb interaction during and even after the crisis (Participant 10 – terror attack).*

These excerpts emphasise an overall feeling among participants of teamwork and collegiality, of one entity working seamlessly together to get the job done. This strong connection between colleagues and the support that they therefore feel

facilitates an informal debriefing process following the event as described by nurses below:

> *You ventilate your feelings and you've got to realise that in speaking there is a legitimisation to feel the way you feel and you are not the only one to feel like it. So basically it's [a] very friendly, supportive team and people aren't shy, they're sitting together. You can see physician and nurses sitting together and talk about their day and share their feelings (Participant 2 – terror attack).*

> *They [colleagues] helped me a lot…everyone had a different experience, right? But some of us could share the same. Could see the same patients, could talk to the same patients, so it was really helpful (participant 6 – earthquake/tsunami).*

These excerpts demonstrate a perceived benefit for nurses through discussing their experience with colleagues after the response. In doing so, they come to the realisation that they were not alone in this experience.

Nurse/Patient

In direct contrast to the consistently strong bonds that exist between colleagues in this research, the interaction between nurses and patients appears to be more labile and affected by a number of factors. As described in the following excerpts, communication between nurses and patients in some cases was impeded by cognitive dysfunction, language and the uniqueness of the situation.

> *I don't know what's their nationality, but I talked in English and because maybe they're in pain, I don't understand what he say and also I said, in English. Little English I understand but sometime he can't catch that. I just remember "Pain, pain." The language barrier at that time is – I want to say something, but she don't understand. I ask someone who can speak English. There is one doctor that's Japanese, I asked him to help me to translate but he said, "I'm sorry. I'm busy." He has too many patients (Participant 5 – terror attack).*

> *Many of the elderlies didn't have attendants, like relatives or families. Many of them cannot remember or anything – I mean dementia. So in that case, we couldn't get any proper information about medical histories or those kind of things (Participant 6 – earthquake/tsunami).*

> *And they didn't speak English. That was the kicker. They all spoke Spanish. So not only do we not know that they're coming, but I don't have any interpreter services ready because I don't know that they don't speak English. So I have all these people walking off the bus, they're fully dressed,*

> *and they don't speak English…Well, we quickly called for interpreter services to come and help us. They refused to come because they didn't want to be contaminated (Participant 8 – chemical spill).*

> *Well, the patients were very fearful of what was happening to them. In a decontamination environment, I don't think patients realise the scope of what has to happen to them to actually go through a decontamination process…you are having to yell so that they can hear you…It's hard as a patient because all you see is my face like this. That's it. That's all so the interaction and the connection is not there. They don't know who you are and even though you try to tell them that you're a nurse, there's no identification on you that says, "I'm a registered nurse, and I'm here to help you." So they're basically taking my word for it in this suit from the movie Contagion (Participant 8 – chemical spill).*

It is evident from the excerpts above that a breakdown in communication creates additional problems with regards to identifying patients, obtaining a patient history and giving instructions to patients. Establishing a rapport with patients is also affected by the phase of the disaster response. For example, when the patients are critically unwell or there are a lot of patients, such as in the initial stages of disaster response, nurses reported having to work at an accelerated pace making it difficult to establish the level of connection with the patient that they normally would. For nurses there is a focus on life saving treatment and the patient nurse interaction can become superficial as a result.

> *There are two main categories. One the critical or moderate patient. Especially if it is critical, you know you are dealing with the procedures. And even the moderate patients will require immediate intervention. We almost don't have the time and they don't get time even to deal with their emotion. So you're doing it in a very practical way. We connect. We provide the medical care. We connect to the family, to the social worker. But we don't deal with their feelings. And we don't deal with our feelings either. But when it comes to the minor patients, this is when you have time to allow them to be with the feelings. They are in the emergency department, you provide the medical care, they are on the stretcher, now they have time to process what they've been through, to realise the critical situation which they've been through, to realise that they're in between death and life. So this is the times that we are involved too and we hear the small stories. And during that time toward the end, you have more capabilities and more chance to attend the emotional part. Because now they are more relaxed, they are in the bed, the quiet surrounding them. They are not in the chaotic atmosphere of the emergency department and they have time to process the situation that they have been through (Participant 2 – terror attack).*

> *My interaction with the patients is minimal. It is very minimal because our main role is to stabilise the patient and send them on to the next level. I think the patient I lasted longest with would have been I think 15 – 30 minutes and most of them we weren't even getting the chance to talk to them. Yes, you can ask them their name if they can respond and other things, but our interaction with them is a bit minimal I must say (Participant 10 – terror attack).*

However, as the response begins to wind down, or where the patients are not as critically unwell, nurses find they have more time to interact with the patients on a deeper level. When nurses had more time to interact with the patients they began to absorb the emotion of the situation through the stories the patients told them, the stories of the affected community and the empathy they felt towards their patients. This is illustrated in the following participant excerpts:

> *But also the, you know, just the panic in the stories that they are – The patients were saying within that as well like how scared they were, and so there was a lot more emotion coming from the patient that you then tended to absorb (Participant 3 – bushfire).*

> *I think he was suffering from dementia he started wandering the corridor in the hospital all night. Early in the morning about four o'clock again he started wandering everywhere. Then I asked him, "What do you want to do now?" And he said, "I want to brush my teeth," but I didn't have a toothbrush and he didn't have one. I had one for me – yes – because I brought everything with me, the necessary things, but I don't have another one, Then I felt maybe I can brush my teeth with other methods, with other ways. Yeah. I decided to give it to him, but I said to him, "This is already used. I used it, but I will wash it and if you want to use it, you can use it." Then he said, "Okay. Thank you very much. I don't mind." Then he take it and then wash it. Then he brushed his teeth. Then I think he was satisfied and he went to the small bed and lay down. Then about six o'clock, one of the nurse found him dead. So – Well, the brushing teeth is nothing, but –for me, that's very special (Participant 6 – earthquake/tsunami).*

> *I felt really sad because he was 22, and that is the same age as my son - I think the whole thing was just the sadness of it and the futility and – so for me, it was just really sad. For me, it was close to home so that added an extra sadness and you try not to think of, you know, your child comes in that's drowned and you're son is the same age. You try not to think about that, but it's still hard to switch off and I think –and we had to cry together and got us some tissues and – I don't care what people say. An emergency nurse is not supposed to cry or hug the patients, I do. <laughs> (Participant 9 – transport incident).*

> *They would tell you so vividly that actually what they saw just people ambushed them, how they shot everywhere randomly, but they can't*

> *actually even remember how they got out of the building. Some will tell you they jumped. That's how they broke their leg. Others will tell you that what saved them is other bodies that piled on top of them. That's how they got to wait, wait, wait until they left the building because they would have been presumed dead by the assailants. But the stories – we didn't have that time to ask those stories (Participant 10 – terror attack).*

As well as the stories, some of the patients made a lasting impression on nurses, as described in the excerpts below:

> *One time when we visit that area, one old lady, she was nice and has passed away. Next to her, another old woman was crying, but of course, she passed away. There was not any – how can I say – person to comfort her…then I thought if I visit her a little bit more earlier, at least I could be with her, but I couldn't. Yes? I don't think – even though I found his heart beat was stopping, maybe I didn't artificial breathing. No. I didn't – maybe, but at least, I could hold her hands and stay with her until she passed away. But she has the result no – how do you say – no one was there for her. That was very bad. But I knew that even in normal thing, in a normal situation, it happens sometimes (Participant 6 – earthquake/tsunami).*

> *I asked him, "Are you okay?" "How are you?" "Can I ask your name?" But the first thing he said to me was – oh no, no. There was three people there. He was only one person who made it on the roof of the summer house. But he said to me that while they are waiting – four people are waiting for rescue, one dropped to the water, one dropped, one dropped and only he remains. He felt guilty because he was rescued. But he couldn't help the other three (Participant 6 – earthquake/tsunami).*

> *The first patient I saw was a local celebrity and unfortunately, she was the first – she was the one – she didn't make it…it's still fresh (Participant 10 – terror attack).*

These excerpts demonstrate that the patients and their stories continue to live in the memories of nurses who were involved in this research.

It is implied from the discussion above that nurses view most people in the ED as an extension of the disaster response. However, nurses appear to have a deep awareness of their relationships with their colleagues and with the patients they care for during a disaster response. The connection between nurses and their colleagues and patients therefore brings relationality to the forefront of nurses' conscious understanding. Existing collegial relations between nurses and their ED colleagues as well as a need to help patients which was demonstrated in the moment of *Notification* is a strong driver motivating nurses to respond to disaster.

Throughout the experience, nurses' relationality to colleagues was consistently robust and well supported by existing relationships. However, the level of interaction between nurses and their patients was less consistent during disaster response affecting their level of engagement. A deep connection between the nurse and their patient can be forged when the response slows down or when the patient's condition is less severe.

Corporeality

Corporeality guides reflection to ask how the body is experienced with respect to the phenomenon (van Manen 2014, p. 304). In the context of this research, this refers to nurses' awareness of their body in relation to working in the ED during a disaster response. Participants in this research expressed corporeality in terms of either the physical or non-physical self. The physical self refers to the human body while the non-physical self refers to the human psyche such as the way nurses feel.

Physical self

The physical self in this context refers to the physical human body form. Awareness of the physical form was brought to awareness through a perceived threat to personal safety for example. In the participant excerpts below nurses describe anxiety related to perceived threats that could have an impact on the physical self

> *We didn't know about how serious is the effect of radiation. Then we didn't know how much damage we may have. I was a senior in the group, in the team. So I was called by the head nurse and she said, "I will give you the device to check the radiation" they said, "And if you – if the number reach to this, please decide to evacuate from them," or – so we didn't really know how much damage we received in that area from the radiation…I was a bit tense (Participant 6 – earthquake/tsunami).*

> *We could feel small earthquake at least three or four times a day, small ones. So sometimes we had to hold something, table or something to keep standing, but fortunately, we didn't face big problems (Participant 6 – earthquake/tsunami).*

> *I think the biggest problem for us was that this chemical was unknown and it's hard to prepare yourself to take care of something when you don't know what you're dealing with. And I understand that that's the disadvantage of doing decon. Is that you're never quite sure what you're dealing with. We had never dealt with that before and I think that I was concerned for my*

> *personal safety, but I was more concerned about the people I work with…Is it going to work? I had done a lot of trainings, but not in a toxic environment, not in an unknown chemical environment, so is this really as safe as they say it is and when I take this suit off, am I going to have a third arm or am I going to be not able to know who I am, or am I going to be dead? (Participant 8 – chemical spill).*

> *They brought one of the guys that shot up the group, so instead of separating the two - the two bunches, they had one of the offenders in with them all, so my problem was security like if this guy or his mates come down. I felt nervous and anxious because there were all these bikies screaming and swearing. So you had that component of unpleasant patients, feeling unsafe, having to cut their clothes off and you know what they're like, you cut their leg, they threaten to come back and kill you and there's one from other group, so you think well if there's somebody coming to finish him off, there's no security (Participant 9 – terror attack).*

> *Also security had to be a concern. There was a fear that probably some people would follow them up here, but I think those who were taking care of the patients, everyone was busy in what they were doing (Participant 10 – terror attack).*

Safety concerns are described by participants in the excerpts above more in general terms, in that the concern exists and nurses are aware of it. However, it is evident from the passages above that although nurses are aware of safety concerns and the potential harm to their physical body this doesn't appear to have any significant bearing on their willingness or ability to be involved in the response. Fear for safety is recognised by participants more as a passing thought than as a significant barrier, as described by the participant below:

> *A lot of security officers arrive to the emergency department, because they have to control the crowds, for one. The other hand, because of our special situation, due to terror attack, the terror may continue on the way to the hospital or in the hospital. It is one of our fears because, for example, we know that terrorists stole ambulances. So they can bring ambulances with explosive material to explode the hospital. So every hospital, every ambulance that's enter to the hospital, is checked by our security guard. This is a reality. It's never stopped me from working (Participant 2 – terror attack).*

Human psyche

Self-awareness of the human psyche is brought to the forefront of nurses' minds in the initial stages of the response. As described in the moments of *Waiting* and *Patient Arrival* nurses speculate on whether they have the skills, knowledge and

experience to manage the forthcoming response. The focus of nurses' attention shifts somewhat as they consider what their role will be and if they have the ability to cope. This has already been illustrated through participant excerpts in the moments of *Waiting* and *Patient Arrival* where nurses describe fear associated with not knowing what to expect and begin to question their knowledge and abilities regarding the ability to cope with the impending response (p. 92). The participant excerpt below further provides an example of a nurse who during these moments describes the anticipation she feels while waiting for patients to arrive to the ED and ponders what her role will be and whether her existing skill set will enable her to save patients.

> *The anticipation of the patients that will present and what your role may be, and I think also too, the anticipation of if the patient is really acutely unwell, you know, are we going to be able to save them (Participant 3 – rail disaster).*

Awareness of the human psyche again comes to the forefront of the nurses' mind towards the end of the response as they begin to reflect on the experience. Nurses involved in this research reflect on their role in the disaster response and further, to the meaning the experience has for them. This is already illustrated in participant passages used in the moment of *Reflection* when after the disaster response nurses reflect on their experience (p. 100). This awareness is further illustrated by the participant below who appears to be making sense of the experience.

> *I remember the next day feeling a little bit challenged in that I didn't work as a nurse as much that day. And it took some – a lot of conversations with some of my colleagues to remind me that my nursing skills were used that day in the patient reunification…even though I might not have done as much hands – I didn't do any hands-on patient care, but our emergency nursing experience really had a significant role in disaster response and disaster management because I think if we had non-clinical people in those roles, it's very difficult to kind of close the little program of the communications and be able to share valid explanations for why things aren't moving as quickly as others think they should be or why some of the challenges of the information that's being shared is not more detailed (Participant 7 – terror attack).*

The participant above describes her mood the next day as she reflects on her role during the disaster response and whether it was enough. While awareness of the

human psyche is heightened in the initial stages of disaster response and towards the end, the midst of the disaster response is marked by a distinct lack of self-awareness. Already described in the moment of *Caring for Patients* (p. 96) nurses express an intense focus on their patients when they are engaged in looking after people who have been affected by a disaster. This lack of self-awareness and focus on the task at hand is further highlighted by additional participant excerpts below:

> *We resuscitated the terrorist because he was critically injured. And this is automatic pilot. I didn't care. I fixed him, but I just put away all my feeling. And I said, "This is a patient. It's my obligation to provide medical care no matter what" (Participant 2 – terror attack).*

> *I feel like I just went about a routine. I think if anything, I went into autopilot and didn't really probably think too much. I really feel like a lot of the time when patients would present, you just – You're going to autopilot mode in terms of caring for the patient and then maybe feel it afterwards (Participant 3 – rail disaster).*

In these stories nurses who participated in this research describe how they suspend thoughts of anything else other than their patients and the task at hand, transitioning into an autopilot mode. In doing this participants tended to disregard their own needs, such as their requirements for sustenance and rest as described in the moment of *Caring for Patients* (p. 96) and in the additional participant excerpts below:

> *The head of nursing department said, "Okay. You should work only eight hours, and please take a rest," but it was impossible. So basically, about 12 hours or more…again the head of nursing department said, "You have a right to have a 45-minute break", but because our lunch or our dinner is just a rice bowl or small breads, so maybe five minutes is enough to eat and of course, we can talk between members and – but we didn't need the 45-minutes break during work because I think, not only me, maybe all of us wanted to work, wanted to support the patients (Participant 6 – tsunami/earthquake).*

> *From the time the first casualty arrived, I think it was around 11 in the morning, from that point to around eight at night, that's when we – we didn't go for any break for those hours from 11 to around eight, nine. There wasn't any break. It was such a busy time that I even forgot someone needs to take tea, someone needs to have lunch. (Participant 10 – terror attack).*

> *Never breaks, never go to eat, never to drink, never to get shower, anything, and sometimes my medical clothes are contaminated with blood and I don't know how to change it (Participant 12 - terror attack).*

The words of the participants highlight a lack of awareness of self in that nurses are so consumed with what they are doing and driven by a need to help others that they seem to forget their own basic needs, such as rest, food and ablutions. This behaviour demonstrates that nurses have a lack of awareness of themselves in the midst of the response as they place more importance on the care of patients. However, awareness of physical self or the human psyche comes to the forefront of the mind when there is a threat to personal safety or in the initial and ending stages of the disaster response when they question their abilities.

Spatiality

Spatiality guides reflection to ask how space is experienced with respect to the phenomenon (van Manen 2014, p. 305). There is a wide variation in ED the world over and nurses who participated in this research worked in a variety of different sized ED. Despite this, they experienced the ED space in a similar way during a disaster response. A discussion of space requires attention to participant experiences that are brought close, or into the foreground of participants' attention rather than geographical space (Mackey 2003, p. 184). In the context of this research, spatiality refers to how nurses perceive changes in the ED space during a disaster response in terms of how their familiar environment changed or was adapted for different use or removed completely. This is expressed by nurses who participated in this research in two ways; the *Altered space* and the *Changed space* which are discussed further below.

Altered space

As notification of a disaster is received, the ED swings into preparatory mode. This alters the ED as staff begin preparing the department to receive an influx of patients. There is a sense from the passages below that the physical space and the atmosphere of the ED is altered in quiet, rushed preparation.

We then had to clear our trauma and resus for patients and then try and start moving all patients up to the ward that had beds and do the mass shuffling that you do (Participant 3 – rail disaster).

I remember them setting up oxygen tanks along seats because part of the treatment for the smoke inhalations from all the fire'ees and everything coming in…it was that preparedness for increased presentations (Participant 4 – bushfire).

I was on the ward and they said, "Look, we need to start clearing beds. There's been a shooting or a mass shooting" (Participant 8 – mass shooting).

In that hour, what we were doing is clearing the emergency department. Most of the people who had come to be seen with minor, minor illnesses, we made the announcement that they should go to our satellite clinics…Those who were waiting for their results, we also told them that they can either come on another day or they could go into other clinics where they could also access their results online from our facility. So we were clearing the department and waiting now for them [patients to arrive]. We were also preparing the packs, the mass casualty packs. We were getting supplies for the ED, now pooling all the resources from the hospital to one bunch in the area and then there was allocation of duties to each and everyone where you would be…Basically, preparation (Participant 10 – terror attack).

We only had 5 minutes. We just assembled outside the main gate. We got the trolleys and we sat there. We just moved them to that area, entrance area…Also, we equipped two of the beds to receive the cases and I think that's what the whole thing because our nursing was rushing to prepare (Participant 11 –transport incident).

As patients arrive to the ED the physical space and atmosphere is again altered as the ED fills with people.

A lot of people everywhere. A lot of family and not only the patient. The journalists come…Just come in. So we don't have the skill or work out how to manage the people, how to manage human resource. We have many patient. We have many people, not only medical professionals, not only nursing, but sometimes students of nursing. They come to see the patient than they can do nothing. And also at that time, there are ward nurses who helped us and then I ask, "Do this" because they're the ward nurses. They can do nothing. "It's not my skill!" "Just do this." "I've never done it." It's crazy. It's crowded and it's frustrating (Participant 5 – bombing).

50 patient directly – Not in the day, in once. There's 50 bed within (Participant 5 – terror attack).

We are a 32-bed ER…We ended up having about 240 patients. We had to set up a mass decontamination tank and do decontamination at the

hospital…Most of them were priority threes or green patients. They were sent to other places. But we did end up decontaminating all 240 of them in about seven hours (Participant 8 – chemical spill).

Most of the patients weren't even part of the incident which was the sad part. There are a lot of people who just want to be part of the landscape. They want to be part of the incident. They want to maybe get their picture on TV or can tell a great story at the dinner table. So we had a lot of patients who weren't in the plant, weren't exposed to anything, but they were driving by, walking by, live in the neighbourhood and they all wanted to be seen and they were all transported. So it all kind of grew into this big mess at the hot side of the decontamination tank (Participant 8 – chemical spill).

At the beginning, it was really chaotic. Everyone was shouting then the relatives started flooding [in]. Then the media also started flooding [in], so a beehive of activities and we had to also involve security so that things can be under control because of the movement of the patient from one area to another…everyone was busy in what they were doing…I would say the atmosphere was at first very hectic and noisy, then it got orderly (Participant 10 – terror attack).

The unit is very small and the injured people, when they arrive the unit begin crowded and we can't move or help anyone, as an example when I help anyone many of the patient stay on the ground. Sometimes I can't help more of them, sometimes I can't see if the patient live or not, when I hear his heart beat my stethoscope, if he not alive I leave him and try and see another one…It's very noisy, you can say like imagine the most, most high noisy, just like that…Very busy, sometimes visitors, sometimes volunteers try to help us, sometimes inured, everyone…there is chaos without a system (Participant 12 – terror attack).

The words of the participants above describe an alteration in the physical space and the atmosphere of the ED. On notification of the event the ED is cleared and prepared and moments later as patients arrive, the physical space becomes crowded and noise levels increase. The volume of people in the ED and the time critical nature of the work nurses are doing creates a feeling of being crowded and frantic making the ED a difficult place to work in.

Some participants involved in this research relate the chaotic nature of the ED during a disaster to non-disaster days in the ED where an event hasn't actually occurred but the ED is so busy, it is similar to a disaster situation.

When a department is out of control and when your resources can't keep up with demand so when you run out of beds, when you run out of oxygen

silos, run out of monitors, and you don't have enough staff, you don't have the skill mix. It's hugely problematic all the time and we're grappling with that now just on everyday basis (Participant 1 – bushfire).

Whereas those situations where it's not an identified disaster, but the ED's heaving and, you know, you're on night duty and there's six patients to a bay and they're all pretty unwell and we have got minimal resources. They're the nights where I think I feel far – More underprepared (Participant 3 – bushfire).

There's been multiple times where it hasn't actually been a code brown as such, but the sheer volume of trauma patients that we have had to care for has been – Is like insane where I think of some shifts that feel far more overwhelming from the acuity, the volume, the less resources (Participant 3 – bushfire).

We get overwhelmed every day but then that becomes a norm. That this is a normal Monday because it's so busy after the weekend. Everyone knows it's going to be busy, everyone knows it's going to be full. So that's the norm. But it's when it's more than a norm, I guess, that yeah, well - that you consider, is it safe? And it often isn't safe. And, you know, overwhelms you, your department, your resources (Participant 4 – flooding).

In the experience of nurses who participated in this research an exception to this is where a disaster has occurred in the community but hardly any patients are transferred to the ED. This was commonly described by participants who were involved in more insidious events such as bushfires and floods.

It was really wait and see, wait and see, wait and see…we just kept going on standby kept listening to the radio we didn't get many people in and we just continued with the onslaught of heat related illnesses (Participant 1 - bushfire).

But it was dead quiet and I think we couldn't pin it down into any particular reason. It wasn't 'til the next day that we found out the devastation of everything (Participant 1 – bushfire).

We had a code brown that in effect, went for three days. So it was actually very quiet from what we were used to because all we had coming were patients who were walking and even then, it was like the community was aware, don't come in unless you, you know, you're a patient who had severe burns (Participant 3 – bushfire).

Everyone was pretty quiet because it's pretty close to home, as in it's a friend of a friend who's died, kind of, or people that you knew. So it was – not a lot of joking or that kind of thing. It was more sombre and quiet and "be prepared for anything" (Participant 4 – flooding).

> *We went into Code Brown. But the difficulty with that was that we were isolated. The region was isolated, so no one could come to us. But also the middle of town was isolated, so none of the patients on that side of town could actually come to us. They had to go to other hospitals. And this side of town could come to us, but no one can get outside of town either because everything was isolated. So the only patients could we get were people very local, could walk in, and anything that was choppered in. So what we got choppered in was high-acuity stuff, but they were few and far between. So we were cut off from the rest of the world for more than a week, kind of. But the ED was incredibly quiet, like it was – eerily, no one was there because no one could get to us unless they were really emergent (Participant 4 – floods).*

While nurses above describe the altered ED space in terms of the volume of traffic within it, they also describe an altered space in terms of their pre-existing understanding of the space. For example nurses may be required to look after patients in areas of the ED where they wouldn't usually. These changes are discussed by participants in the excerpts below:

> *So it was within ED, it was a room that was kind of like a plaster room in a way. So it didn't have all of the emergency kind of equipment that we would have liked in a resus room. It still had oxygen and suction, and we were able to move some stuff there. We had drawers that had your medications and things in – your resus meds that were attached to poles and things like that, so we didn't have a trolley you could take with you to another room. We'd have to take just a normal resus trolley. So it was just less than ideal (Participant 4 – ED evacuation).*

> *It was a little bit of lateral thinking of we don't have to put the other eight or nine potentially to fifteen injured soldiers coming in to resus. We can put them in the appropriate area in the department. So if it's acute or subacute, but we can still make sure we get a trauma input. So we can still get the trauma surgeons to see the guy in resus, to see the guy next to him, to see the ones in acute and to see the other ones with the fractures. So we can still put a process in place that's not bed-specific, if that makes sense (Participant 9 – transport incident).*

In these examples patients were seen in areas that they wouldn't usually be treated in. For example, most EDs have a physical space such as a resuscitation room where critically ill or injured patients are treated. In a disaster however, these spaces may already be occupied by an initial wave of critically ill or injured patients so that subsequent patients who would, under normal circumstances be seen in these rooms will be redirected to another space in the ED that may not be equipped to manage a patient requiring that level of care.

Changed space

The discussion above demonstrates how the physical space and the atmosphere of the ED can be altered by disaster response. The discussion that follows demonstrates that a disaster response may require emergency nurses to work in a completely different space than the one they are used to. This is seen when nurses work in other areas of the hospital as part of the ED response such as decontamination tents or temporary areas set up to manage the high volume of patients as described by the following participants:

> *So we created an area just in front of the outpatient clinic. We put temporary beds, the small beds not the sofa beds. 40 beds and some of the medical equipment, infusion and trolleys because we didn't have a proper space to sort it out (Participant 6 – earthquake/tsunami).*

> *One thing is that you can't hear anything. So you're kind of in your own little space. And the only sound that you can hear is the motor running on the powered air respirator and this little shield of air that blows over your face. So you feel isolated and you feel alone. And you feel as though if something happens to you, there's – how quickly can someone get me out of this thing is. And I also knew that if anything happened to me that they have to decon me first before they can take you out of the suit. So if something happens to you, you still have to stay in the suit until somebody a) kind of finds you in the tent and then they have to decon you before they could take you out. So it is very, very claustrophobic and fear inducing and lonely. It's very lonely in there. Even though you're busy, you don't feel – like when you're standing next to somebody and you're working, there's stimulation. In a suit, there's none. Your peripheral vision is gone. You can only see out the front of the visor. You have no manual dexterity at all. And all you hear is this hum of the air and that's it. (Participant 8 – chemical spill).*

Elements of relationality and corporeality emerge within the above excerpt in that the nurse is aware that wearing the suit affects his interaction with others. Additionally, the participant becomes aware of his own body through the perceived threat to personal safety and a feeling of being isolated. In both of these examples, nurses are required to work in a completely different environment to the one that they work in on a daily basis. Additionally some nurses who participated in this research were required to work in completely different health care facilities as described by the participants below:

> *It was confusing, it was frustrating, and it took a little while to develop who was the boss…They had a different computer system to us. So we didn't know their computer system; they didn't know what we wanted. Nothing was compatible…and like where is all the stuff? Where is your toilet? Didn't know where anything was. It was difficult. (Participant 4 – bomb threat).*

> *At the time just what I want to do is just to save the patient, but I don't know where is any resources that I need. I didn't know where should I get it. I always asked someone. Don't know where…And also the protocol is different with my hospital. (Participant 5 – airplane crash).*

The passages above highlight that nurses found it difficult to relocate to another health facility during a disaster response, largely due to the unfamiliarity of the new environment.

The ED space is a taken for granted space that nurses enter every shift and work within. On busy days that space may become full as each bed becomes occupied by patients or as the corridors fill with patients laying on beds. With the addition of more patients and more staff, the ED space may become noisier. In contrast, on a slower day, this space, with less humans in it may be calmer and quieter. These changes occur insidiously as patient presentations fluctuate over the course of the day or shift. However, during a disaster, this change may occur suddenly and nurses' experience of space is altered and they are forced to re-evaluate their surroundings; there are too many people crowding their space and they cannot work as they normally would, the environment they are used to has been removed or altered and the things that nurses usually have to hand are not available, the space is empty and there is no need to do the things they would normally do. The space changes in a disaster and in doing so the role and experience of nurses is altered. These changes occur in a very short period of time requiring nurses to think on their feet and rapidly adapt to changes.

Temporality

Temporality guides reflection to ask how time is experienced with respect to the phenomenon (van Manen 2014, p. 305). Time is a fundamental structure of human existence (Mackey 2005, p. 183). As opposed to objective time, that is measured

and defined by the clock, lived time is subjective. Lived time is the passing of time as it is experienced by someone living through the phenomenon. Heidegger (1962, p. 40) states that 'Being cannot be grasped except by taking time into consideration', implicating time as a central feature of Hermeneutic Phenomenology. When conducting research in an interpretative phenomenological manner the researcher must therefore consider that all human experience is grounded in time, and that the experience of time is fundamental to an understanding of Being, and the ways of Being (Mackey 2015, p. 183). Time was not explicitly discussed by nurses who participated in this research but the experience of time is implicitly evident throughout their recollections of the phenomenon. Nurses referred to time in two different contexts; the experience of time as it passed during the disaster response and their understanding of past, present and future in relation to the phenomenon.

Passing of time

> *And then, all of a sudden, a yellow school bus showed up with 70 patients on it that we did not know were coming. So it kind of started very quickly from that point forward (Participant 8 – chemical spill).*

In the excerpt above the nurse refers to the sudden arrival of the school bus full of patients as marking the beginning of the disaster response implying that time had been sped up. An exception to this is when the ED remains on high alert but a patient has not arrived for some time, as described in the participant excerpt below:

> *The following almost another 12 hours later, there wasn't much doing. It was just waiting because remember, we had asked most of the people with minor illnesses that we will be seeing them anytime again until the disaster is clear so there weren't anything to do. We were just sitting, rehashing on protocols about mass casualties. Our team leaders were there giving us tips and also debriefing on how the performance was for the time when we had – in full mode action. We were just waiting and waiting (Participant 10 – terror attack).*

In this example time appears to pass very slowly as nurses wait for something to happen. It seems that there is a perceived slowing of time between notification the event has occurred and patients arriving to the ED, but in referring back to *Spatiality* (p. 21) and the passage above nurses appear to make a subconscious effort to make this time pass quicker, by filling it with preparedness activities.

Once the response commences and nurses are in the thick of it, time is suspended in that nurses are not aware of its passing. This was described previously in the moment of *Caring for Patients* (p. 95) and through *Relationality* (p. 109) where nurses block out everything that is going on around them to focus solely on the task at hand. Although time appears to be suspended, in that nurses are not aware of its passing, there is a perceived time critical aspect to what nurses are doing so although time itself is suspended, nurses are feeling more rushed.

> *They were normal things that we do. Nothing was different except now things had to be done at an extra faster pace (Participant 10 – mass shooting).*
>
> *It was completely too busy and committed and there wasn't much time to think about anything else, just what's needed to be done at that particular time. (Participant 10 – mass shooting).*
>
> *There is never enough time. I try to help as I can. (Participant 12 – terror attack).*

Although there was a lack of awareness around the passing of time, participants describe the time critical aspect of the response as partially driving their focus. As the response winds down and the time critical aspect is relaxed, nurses begin interacting with their patients again on a more therapeutic level as discussed in reference to *Relationality* (p. 109) where nurses perceive that they now have enough time to interact more deeply with their patients. The experience of time passing during a disaster response is perhaps not unlike a normal day in the ED in that when there are patients to care for there is a perception that time speeds up leading to comments about how quickly the shift has passed. Conversely, the comment may be made that the shift passed slowly if the ED was experiencing fewer patient presentations than usual.

Past, present and future

Past, present and future appear to exist altogether within the disaster response experience. The past is bought into the present by nurses as they consider whether they have previously acquired the appropriate tools, such as knowledge, skills and experience, to allow them to

function appropriately in the future; the disaster response which is about to happen. This is was demonstrated in the moments of *Notification* (p. 88) and *Waiting* (p. 93) and also *Corporeality* (p. 118).

A perceived lack of preparedness during disaster response is inextricably linked to the past, in that, if the nurse hasn't previously been involved in disaster response or has not trained for disaster response, they describe feeling unprepared and less confident. This was demonstrated in the moment of *Reflection* (p. 100). Additionally, if in the past nurses had not considered the likelihood of a disaster occurring in the future, the disaster event comes as an unanticipated shock, as described by the participant below:

> *We never think that we will have a disaster like that. And then we didn't prepare for the resources. We don't have a system. That's the big problem. We don't have a back-up planning for the human resources. We just come and did what we can. (Participant 5 – terror attack).*

With subsequent disaster responses, plans and procedures have often been established as a result of lessons learnt from the previous response as described by the participant below:

> *And the second bomb, after maybe two or three years after the first bomb, we already have hospital disaster plan. (Participant 5 – terror attack).*

As a result, nurses can feel more prepared and confident to respond than if they didn't have a disaster plan in place. This suggests that with time and repeated experiences we can learn and become more resilient to future responses.

Also in the present the past has come back to haunt some of the participants in this research. In the moment of *Waiting* discussed earlier, nurses who had previously been involved in disaster response reported flashbacks to previous disaster response experiences. In their excerpts nurses described being assailed by the sights and sounds of previous disaster response.

Towards the end of the response and after the response as nurses reflect on their experience, thoughts may go to the future as they try to make sense of what happened and what it means to their lifeworld. Nurses question their existence and question the meaning of life that so many should die as a result of one event. Nurses begin to contemplate their existence and their future as outlined in the moment of *Reflection* (p. 100) and in the participant excerpt below:

> *I have a very sad experience, yes, but that I could say where experience was very precious for me…But I think the experience made me think what is my life, what my life is…why I'm living like this, why not like that…Twenty thousand people died at once. Why? Why didn't I? Somehow they were making efforts to build their life, to make new families, yes. So the one it is studying hard to reach to that effort. But why does disaster happen? But - so, I can't find the answer for that. I can't find answer, but because we got there, there's some things, many things that we can't control and I – that's why I think I reached to the last point, last day of my life, I want to do something. I want to keep doing something…So in my daily life, I think that on my own, you have to do, you have to keep living, keep walking, keep studying over, keep in time - yeah, may until the last day. 'Cause you don't know the last day, when your last day comes. In that disaster, I strongly felt we don't know anything about the - in your future (Participant 6 – earthquake/tsunami).*

It is highlighted in the words above and through the excerpts in the moment of *Reflection* (p. 100) that disaster response is an extraordinary event because it causes nurses to pause and reflect.

Materiality

Materiality guides reflection to ask how things are experienced with respect to the phenomenon (van Manen 2014, p. 306). Lived things are present all around us. They may be material objects such as human and medical resources used to boost the ED response, or they may be immaterial concepts. In the context of this research, materiality explores how nurses experience the things around them. For example, when a disaster is declared as a disaster, nurses who participated in this research describe how processes were implemented and material resources became abundant:

> *All the equipment comes from the storage area. Immediately, they push the equipment to the emergency department. We can fight everyday about*

> *small things but in the mass event, we are flooded with equipment, we are flooded with more supporting staff from the hospital's other department. They will provide more equipment if needed, even without asking (Participant 2 – terror attack).*
>
> *They provide all the resources where they're able to and, you know, they find beds available pretty quick. It's amazing how beds and so forth can be available pretty quickly in those scenarios (participant 3 – rail disaster).*
>
> *There was never a challenge in finding the resources you need and then I think that was really important for the healthcare workers (Participant 7 – terror attack).*

Human resources also become abundant in the initial stages of a declared disaster as extra staff arrive to the ED from various parts of the hospital to bulk up the response. This includes nurses from other wards, medical doctors from other specialties and volunteers as described by participants below:

> *Because there was the change of shift, there were still some of the am [morning shift] staff that hung around. There were the pm [afternoon shift] staff that were on shift as well. So you had double numbers because people were hanging around…knowing that you have a code brown or an identified disaster people come down (participant 3 – rail disaster).*
>
> *Once you call a disaster, it sets off a whole motion and a whole chain reaction of different things. Suddenly more people are notified and different things happen to make way for the disaster. Certainly, you can have different phases and so once a disaster is called, things are dealt with in a different way. And that may mean that all your admitted patients go to the ward without being seen and written up or beautifully vibed in patient teams, you know, that means that minimal things get done. It means people get pulled off their office jobs onto the floor and help in a certain roles that need to be filled. And having the walk-in wounded leave or go somewhere else and having clearance to wards enables to freeing up a staff too. So, it does calling a disaster certainly kicks thing different phases of plans…So there's a chain of events that happens (Participant 4 - flooding).*
>
> *We had to triple or even four times the usual number of doctors, the usual number of nurses, assistants. It was in every sense of the work very different from a normal day (Participant 10 – terror attack).*

What is evident from the words above and through *Spatiality* (p. 122) is that the extra staff can exacerbate the chaotic atmosphere of the ED.

In catastrophic disasters or where there is a perceived lack of preparedness, material resources may not initially be readily available due to the scale of the

event. In these events nurses had to prioritise use of resources and make tough decisions regarding who gets what. These are difficult decisions for nurses who are well aware that under non disaster circumstances, outcomes might be different.

> *What should I do? No equipment, limited doctor, no medication and also medical record. We never think that we will have a disaster like that. And we didn't prepare for the resources. We don't have a system. That's the big problem. We don't have a back-up planning for the human resources. We just come and did what we can and because we are limited resources and limited anything, we get frantic and finally, our hospital called the closest hospital and then called the doctor who are not on shift, the nurses. But it took time because we're not prepared for that (Participant 5 – terror attack).*
>
> *In the disaster area, we are facing the shortage of human power and medical resources, but I knew that in Nagoya, or even in Tokyo, we have plenty of medical resources. But at that moment – in that time – at that moment, we couldn't get it. That's why we had to lose some lives. So I feel irritation about it – Japan is a highly developed country we have money, we have human power, but we try to – we made the effort. But still, in that situation, we have to – yes (Participant 6 – earthquake/tsunami).*
>
> *We couldn't provide proper, necessary treatment to everyone. And I tried to accustom myself because you have to - we have to accept that situation, because we are in a disaster situation. We cannot do everything to everyone and I think "this is disaster for the whole" (Participant 6 – earthquake/tsunami).*
>
> *You're overwhelmed and you have to call for outside help…I would have call that a disaster because we did transfer people out and there was a larger volume (Participant 9 – transport incident/terror attack).*
>
> *The challenge was getting the manpower – was a bit challenging 'cause you have to make those phone calls. You have to look for people and in the initial stages (Participant 10 – terror attack).*
>
> *You cannot provide minimum healthcare for patients. That's because of the overall patient numbers in the department so maybe you sometimes go outside the hospital to provide that (Participant 11 – transport incident).*

Due to a lack of human resources such as doctors, participants reported working with a greater sense of autonomy than on a normal working day.

> *There are many patients, I feel so helpless. I can do nothing at that time. I can't help. I don't have the skill. I just – "what happened here?" And finally the doctor say "Just do whatever you want to do" (Participant 5 - bombing).*

In normal situation, we can practice our protocol and when we can assess that patient. We can treat the patient properly because we have enough resources and then, there are family that we can ask for the information, that we have enough information for that…But in disaster, we can't use our policy. For example, like policy – If we want to give medication, is about the doctor. We want to do resuscitation, just wait for the doctor. But in disaster, we just do by myself. We can use resources, whatever you want, a disaster. If they're still available, we can use it. Put IV, for example, in Indonesia, IV is – The nurse do – The nurse put it, but it's under doctors' orders, but in this case, in a disaster, we just – We don't need the doctor. Yeah just put it. Yeah. I should do it, but I feel – what call? It's not my job. Is it wrong or too wrong, is good or right? But I still did it. I didn't care. I want to save the patient, if I wait for the doctor, they will die. Yeah, but it would not happen in normal situation. I will ask, "is it possible?", but in disaster –Like give analgesia, simple analgesia. Yes, this too. Because we know there are – That what's normal analgesia the doctor gives, we just give it. And certainly, after some time, they say "Oh, it's OK. This disaster, you can do it." For example, oxygen, the high flow oxygen is a doctor order, but we just give it and sometime we did intubation. Yeah. There's we did intubation. Sometime we see the doctor just do it like this. Normal day, no, but in case of cardiac arrest in the disaster, we did it. Everyone do it and so it's just OK (Participant 5 – terror attack).

Sometimes I do doctors procedure, not just me many of my friends do that like this because we suffer from shortness of team work. Like stitches, operations, sometimes I make to fix broken arm, broken wounds and so on. In a normal situation we cant do that, we was suffer from shortness of teamwork and sometimes even there is a doctor in my unit but there are a lot of severe emergency with other patients (Participant 12 – terror attack).

During some disasters, particularly those that are overwhelming, or occur where plans are non-existent or untested, participants report working outside their usual scope of practice. Nurses involved in this research make a conscious decision to provide treatment to patients that they wouldn't under normal conditions provide without direction. The time critical situation and the strong desire to help patients appears to be a motivating factor behind this decision.

Some skills such as plastering, suturing and in some cases intubating a patient, participants admitted to having limited or no training or experience with but have often observed doctors performing these skills and therefore feel they have enough of a basic understanding to perform the tasks without supervision. In the eyes of these nurses time is of the essence and even without proper training or practice, they believe that in performing these tasks they are saving the lives of the patients.

Other skills such as administering intravenous fluids or analgesia are things that the participants do on an everyday basis under the direction of doctors. Because they have done these things many times they feel they have the knowledge to do it without direction. Knowing that the patients need these things to ease their suffering or save their lives (depending on the task that is being performed) and that they have the capacity to do this, outweighs any legalities around whether this is right or wrong.

Due to being in the midst of a disaster response participants feel that their colleagues generally turn a blind eye to the practice and they describe a general feeling amongst ED staff that everyone pitches in and does what they can. This practice is also clearly supported by medical colleagues who would ordinarily perform the tasks or provide the orders.

> *During the disaster I think there was more autonomy. The things we could handle ourselves, we handled. If we needed to refer or consult a doctor, we did, but that day, it was more of if you're sure of what you are doing, no one was questioning and most of the things went quite smoothly enough. But I must say, normally, I cannot give a controlled drug without it having been prescribed, but on that day, I found myself giving those narcotics even without – but they would still – after you tell them, they would still verify and say it's the right call to make (Participant 11 – transport incident).*

Additionally, a lack of resources requires nurses to make difficult decisions. In a disaster situation limited resources and sheer numbers of patients may prevent the ED team from being able to provide the level of treatment that they would normally provide to one patient.

> *There was genuine fear and unrest and concern on how much you could do given that the protocol would indicate that you only save the ones that you can be sure that you can actually save, the ones closest to the end of life, you let them be and it was a bit difficult to make those choices…I remember the first patient I saw was a local celebrity and unfortunately, she didn't make it. We had to make that quick decision on – is it worth doing the resuscitation given that there are others coming in, so many of them? So we didn't – ultimately, I had to make that decision that we cannot go into resuscitation mode. We would rather go for the others and save more lives than concentrate on this one that's almost losing it. So at the end of the day, it was the worst thing for us 'cause it's the first thing that went out to social media. She was known. She was loved. We still feel that we didn't give enough (Participant 10 – terror attack).*

> *Just to do anything to help people and sometimes without sterilisation, this is not humanity for patients that come here. None of it is in my hands or my friends hands (Participant 12 – terror attack).*

These passages demonstrate not only how difficult these decisions are, but how they remain with the participants. The decision to withdraw care in this situation was also frustrating for participants who were aware that under normal circumstances they could potentially save the patient.

> *Had it been a different situation, probably we could have saved her life, but given that they were coming, so many of them, that decision had to be made, so she's still in my mind. I still see how she presented and the people who brought her. She didn't come with an ambulance. She was brought by relatives and other friends and – Yeah - it's still fresh (Participant 10 – terror attack).*

Participants feel uncomfortable and frustrated that the situation requires such a definitive decision. They are aware that there are many more patients to be treated and that a lack of resources has forced their hand so to speak. Another participant describes an area which is devoted to patients that are unlikely to survive:

> *Those patients, are very elder, maybe over 80, and they have paralysis. For those patients, they constantly faced – they were facing lack of medical equipment. We had to decide only one bottle of – excuse me (Participant 6 – earthquake/tsunami).*

At this point the participant becomes distressed when recalling the inability to provide care due to limited resources. The participant continues:

> *We just kept those patients in one area. And some people really don't have a space – they didn't have proper space…if we think that the person is – has a chance to survive, of course we treat, but if not, we have to send them to grey area. We cannot put that directly to the patients. But we all knew that if the person doesn't have any person to take care of her directly, the chance to survive for that kind of person is very low. Then – yes – we go – we send them to the grey area…Maybe those patients are basically bed-ridden. They – maybe because we couldn't identify who they are. Maybe those patients – those person stay living in a kind of facilities – nurseries – either in nurseries or in the hospitals…I want to clarify, no one said it's grey area. No. The grey area is not a proper name. Only for us knows about that – there was that kind of area…Because the people who are working in that area knows about – there was the area which is called grey area by some nurses, like me. But officially, this issue it's not talked about (Participant 6 – earthquake/tsunami).*

The participant was quite emotional throughout the telling of this, and when asked why, by the interviewer, she stated:

> *In disaster area, we are facing the shortage human power and medical resources, but I knew [in other areas of the country], we have plenty of medical resources. But at that moment – in that time – at that moment, we couldn't get it. That's why we had to lose some lives. So I feel irritation about it [because we are a] highly developed countries, and we have money, we have human power…but still, in that situation, of course you have to understand the limitation (Participant 6 – earthquake/tsunami).*

Materiality was discussed by nurses in this research in relation to resources and came to the fore when they noticed if resources were lacking or abundant. Participants describe how the declaration of a disaster results in an abundant supply of human and material resources. The exception to this however, is during catastrophic disasters that have a severe impact on the surrounding community. In these instances, resources are often lacking. When resources are lacking the event becomes more overwhelming for nurses who feel they need to work more autonomously, sometimes outside of their usual scope of practice, as well as make difficult decisions regarding patient care, which they know under normal circumstances they wouldn't have to make.

Summary

This chapter describes the findings of the research through an existential lens. The five life existentials highlighted by van Manen; *Relationality, Corporeality, Spatiality, Temporality* and *Materiality* allow the phenomenon to show itself in a way that is relevant and familiar to our human lifeworld. The discussion in this chapter highlights a strong bond between nurses and their colleagues as well as nurses' deep awareness of their patients. Also highlighted in this chapter is that the ED space is altered or changed during a disaster response and the presence or absence of material goods has a bearing on nurses' behaviour. This brings the life existentials of *Relationality, Spatiality* and *Materiality* to the forefront of nurses' consciousness during disaster response, while *Corporeality* and *Temporality* are more implicit within the experience. The following chapter will explore the meaning that is

embedded within the participant's experiences of working as a nurse in the ED during a disaster response.

CHAPTER SEVEN: DISCUSSION OF THE FINDINGS

Chapter Overview

The findings of this research are presented in Chapter Five and Chapter Six as two different perspectives. The first perspective, Moments of Disaster Response emerged through a thematic analysis of the participant experience. Five Moments of Disaster Response were presented; *Notification, Waiting, Patient arrival, Caring for patients* and *Reflection.* Each of these moments encapsulates an aspect of disaster response common to the collective experience. *Notification* describes the moment nurses working in the ED first learn that there has been a disaster event that may require a response from the ED. *Waiting* refers to the period between receiving initial notification and when patients arrive. *Patient arrival* describes the initial arrival of patients to the ED following a disaster event and *Caring for patients* refers to the bulk and the focus of the disaster response. The final moment, *Reflection* occurs towards the end and after the disaster response. Chapter Five describes the feelings and experiences of nurses who participated in this research as they moved through these different moments and concludes with a narrative account of what the experience might be like.

The second perspective of the findings presented in Chapter Six is a reflection on the Life Existentials which emerged through the participant experience. This discussion presents five life existentials that are highlighted by van Manen (2014, p. 302) as being common to everyone's lifeworld; *Relationality, Corporeality, Spatiality, Temporality* and *Materiality. Relationality* refers to how we relate to others and describes nurses' relatedness to colleagues and patients. *Corporeality* refers to how we view our body in relation to the phenomenon and describes nurses' experience of their physical body and subjective self. *Temporality* refers to how time is experienced with relation to the phenomenon and discusses nurses' experience of time passing and concept of time in relation to past, present and future. *Spatiality* refers to how we experience space with regards to the phenomenon and relates to nurses' experience of the altered and changed ED

space. The fifth life existential, *Materiality* refers to how things are experienced, which in this context relates to how nurses experienced material and human resources during disaster response.

Two key themes that characterise the experience of working as a nurse in the ED during a disaster response emerged from the findings of the research. These are firstly that emergency nurses demonstrate an innate need to help with disaster response and secondly that disasters are different from the norm. While the previous two chapters present a straight forward description of the research findings, this chapter will present a deeper consideration of the research findings in order to illuminate the meaning embedded within the experience of working as a nurse in the ED during a disaster response. The discussion in this chapter will take into account related literature and the work of other scholars and philosophers which according to van Manen (2014 p. 324) will reveal dimensions of meaning that had not been previously seen. The remainder of this chapter is presented as a discussion of the two key themes stated above.

A need to help

Nurses who participated in this research demonstrated a strong desire to use their skills and knowledge to help those affected by the disaster. This was illustrated initially by nurses' choosing to respond to the event regardless of where they were at the time of notification (p. 88). A strong desire to help is also evident through nurses' continued participation in the response, working extended hours without taking breaks (p. 120) and working outside their usual scope of practice (p. 133). Through each of these behaviours the underlying motivation appears to be a desire to help others; those affected by the event and their colleagues. Whether they perceive themselves to be prepared or not, nurses who participated in this research were driven by factors beyond their individual self to respond to disaster, these altruistic endeavours underpin the following discussions related to emergency nurses' need to help and will be discussed below in relation to; motivation to

respond and participate in disaster response, volunteering, working long hours and working outside their usual scope of practice.

Strong collegial bonds

Nurses involved in this research describe the strong bonds that exist between themselves and their colleagues during a disaster. This is evident not only between staff who are currently working together in the ED just prior to the disaster response, but also staff who have worked together in previous years who return to the ED to volunteer. Colleagues in this context refers not only to nursing colleagues but also to all staff who usually work in the ED. Nurses feel comfortable working with staff they have previously worked with as they know what their capabilities are and can more readily rely on them during the response. Furthermore, the act of volunteering that occurs when previous colleagues return to help may be useful in boosting a deficient workforce with co-workers who are known to each other. This relationship also supports the debriefing process following the disaster response because staff feel comfortable with each other. Nurses feel supported by their colleagues during and after the response and appear to get a great deal of comfort out of this relationship. Furthermore the ties that bind nurses with their ED colleagues act as a strong driver motivating nurses to participate in a disaster response.

That emergency nurses work as part of a team was something I identified in my pre-understanding of the experience (p. 39). Additionally, a strong sense of collegiality among emergency nurses during disaster is also well supported in the literature. As with the nurses involved in this research, most of the literature, discusses collegiality in terms of the whole ED team and often including prehospital staff and other services (Amundson & Burkle 1995; Mickelson *et al.* 1999; Frank 2001; Yip 2002; Palmer *et al*. 2003; Taylor *et al*. 2003; Behney e*t al.* 2006; Richardson *et al.* *2*013; Lenehan & Hughes 2014). The familiarity that comes from working with people who you have already worked with boosts confidence in staff. In their discussion of the ED response to the Oklahoma bombing Amundson and Burkle (1995, p. 5) describe how they found it comforting to see former co-workers whose

abilities and experiences were known, but also in who they were confident they could locate supplies and were familiar with procedures. Yip (2002, p. 10) who responded to the World Trade Centre attacks writes 'doctors and nurses I have not seen in years come to the ER, hoping to help. The camaraderie is uplifting'. Positive collegial relations has also been highlighted by Arbon *et al*. (2013b) as a consideration when deciding whether or not to participate in a disaster response.

The strong relationality that emergency nurses feel towards their colleagues is an important motivating factor behind their decision to participate in disaster response and further highlights that emergency nurses are motivated by altruistic endeavours. This finding is also relevant in that collegiality extends beyond nursing colleagues to include all ED colleagues. Existing relationships with colleagues seem to be of great importance to emergency nurses during and after the disaster response. This finding is relevant in the context of the changes that occur in the ED during a disaster such as the sudden influx of patients, the altered environment and the feeling that nurses are left with after the disaster response. The importance nurses place on their relationships with their colleagues is perhaps because during a time of unfamiliarity and uncertainty there is some comfort to be found in the fact that their colleagues are familiar to them.

Motivation to respond and participate

On receiving notification of a disaster event with the potential to impact the ED, nurses who participated in this research made a conscious decision to participate in the response and continue to respond. Consideration of family safety, personal safety or personal wellbeing does not appear to influence nurses' participation in disaster response. As the aim of this research was to explore the experiences of nurses who worked in the ED during a disaster it does not take into account nurses who may have made a choice not to respond. Conclusions therefore cannot be made about the willingness of emergency nurses to respond to disaster based on this research but it is evident from other literature that as a group, emergency nurses are highly motivated to respond to disaster.

When considering what I understood to be true about the phenomenon I also highlighted that I believed emergency nurses will 'pitch in' when they are needed (p. 46). A high motivation of emergency nurses to participate in disaster response is reported in literature that specifically explores the willingness or motivation of emergency nurses and other ED staff to respond to disasters. These studies find that emergency nurses are generally willing to participate in disaster response despite a number of factors which could potentially hinder their ability or willingness (Considine & Mitchell 2008; Arbon *et al*. 2013a & 2013b; Khan & Al Johani 2014). One factor that does impact nurses' motivation to respond to a disaster is the type of event. Unconventional events such as CBRNE or events with children as patients are associated with higher absenteeism and lower levels of ED staff (including emergency nurses) willingness to respond than conventional and sudden onset disasters (Masterson *et al.* 2007; Rassin *et al*. 2007; Martinese *et al.* 2009; Considine *et al.* FitzGerald 2011). This is important to note in the context of this research where most of the participants have participated in sudden onset or conventional events.

Examples from literature that discusses actual disaster response also supports the notion that emergency nurses are highly motivated to participate in disaster response. For example Riba and Reches (2002, p. 3) reported that Israeli nurses felt a compelling need to respond to terror attacks regardless of the time of day, what they might have been doing or the complexity involved in making arrangements for their families. Emergency nurses also display a willingness to participate in disaster response by reporting to their nearest ED to support disaster response, regardless of whether they are currently employed there or not. This was demonstrated during the Oklahoma bombing (Amundson & Burkle 1995), Omagh bombing (Collins 2001), World Trade Centre attack (Frank 2001; Yip 2002), Christchurch earthquakes (Richardson *et al*. 2013) and Boston marathon bombing (Lenehan & Hughes 2014). As well, there is evidence in the literature that emergency nurses have continued to work through a disaster response despite damage to their own homes and damage to the ED (Richardson *et al.* 2013).

Volunteering

Also evident in the research findings is that upon receiving notification of a disaster, nurses who were not at work at the time made their way back to the ED to participate in the response. The act of volunteering implies a high motivation to respond to disasters and has also been evidenced in the literature as was previously discussed in relation to motivation. Through this study and in the literature the decision to volunteer appears to be made by nurses largely without confirming the information with their manager or hospital (Amundson & Burkle 1995; Collins 2001; Yip 2002). This phenomenon has also been widely reported in literature in relation to other nursing specialties and ED health care professionals who have volunteered during disasters (Anteau & Williams 1998; Hogan 1999; Roccaforte 2001; Yip 2002; Halpern *et al.* 2003; Fothergill *et al.* 2005; Peltz *et al.* 2006; Zoraster 2006; Merchant *et al.* 2010; Ardagh *et al.* 2012; Hirsch *et al*. 2015).

Spontaneous volunteerism can overwhelm a response system and, unless coordinated, can make things worse instead of better (Merchant *et al*. 2010, p. 872). According to Peterson (2006) following 9/11, and the subsequent anthrax attacks, it became clear the USA did not have the capacity to quickly verify the identity, licensing, education and employment of health care professionals' volunteering in disaster response. This led to the development of a national register for health care professionals volunteering in disasters (Peterson 2006). In Australia The Australasian College of Emergency Medicine (ACEM 2013) has also developed a policy on the ED management of medical and nursing volunteers during disasters stating that capabilities for managing volunteers need to be included in disaster plans.

Although this behaviour comes from an admirable place there are numerous implications associated with volunteering. Firstly, hospitals may not have systems in place to verify the qualifications and experience of the nurses or healthcare workers that are unknown to them. This could lead to a situation where unqualified or inexperienced staff are providing patient care. Another implication could be that an influx of volunteers could further overwhelm a hospital. Furthermore volunteers

might not be needed where a hospital has well practiced plans and adequate surge capacity. Finally, an influx of hospital workers in the initial stages of a response may create problems in prolonged disaster response where all available staff have been exhausted in the initial stages of the response. This highlights an area for further exploration and policy development in relation to the management of nursing volunteers to the ED during a disaster.

Working long hours

In the moment of *Caring for patients* (p. 96) and through the discussion of *Corporeality* (p. 118) and *Temporality* (p. 128) nurses who participated in this research describe an all encompassing focus on their patients and as a result they worked long hours without taking work breaks. This behaviour is also evident throughout the literature with emergency nurses describing a time critical aspect of working during a disaster response causing them to have complete focus on patient care (Amundson & Burkle 1995; Frank 2001; Collins 2001; Riba & Reches 2002; Yip 2002; Taylor *et al*. 2003). Additionally, there is some evidence that nurses are working long hours during disaster response, for example one participant reported working for a period of at least 15 hours during the Bali bombing response (Taylor *et al*. 2003, p. 5) and another nurse responding to the World Trade Center attack reported working from at least 0855 until the night staff arrived (Frank, 2001, p. 539). Although it is not clear from the literature if nurses are taking breaks during this time it is evident that emergency nurses are working extended hours.

Anecdotally, there is evidence on online forums (Graban 2014; The Commuter 2015; Reddit 2016) and from personal experience that emergency nurses are regularly skipping work breaks in their everyday practice. There is also evidence in the literature that nurses in other specialties as well as emergency nursing are skipping work breaks to provide patient care (Rogers *et al.* 2004a; Rogers *et al.* 2004b; Witkoski & Dickson 2010; Nejati *et al.* 2016). Infact, Rogers *et al.* (2004a, p. 517) identifies this as a universal practice within nursing that requires a shift in thinking. A wide body of evidence demonstrates that ignoring work breaks may create fatigue and could be associated with poor patient outcomes. According to

Rogers *et al.* (2004b, p. 210) the likelihood of making an error increased with longer work hours and was three times higher when nurses worked shifts lasting 12.5 hours or more. Furthermore, this behaviour can contribute to burnout and nurses leaving the profession (Rogers *et al.* 2004a).

It could be argued that the effects of skipping breaks are cumulative and therefore the act of skipping breaks during a disaster response alone may have minimal consequences. This could be said for sudden onset events with a reasonably short duration, but for prolonged events, nurses skipping breaks could potentially result in poorer outcomes for the patients and for nurses' wellbeing. Again, this behaviour is driven by altruistic intent whereby nurses are focused on others rather than their own needs. It is not possible to make sweeping generalisations based on this research, but given that this practice is decribed in the disaster litertaure as well as in every day practice, there is highlighted need for further research to explore the frequency and implications of working long hours without breaks during diasster response.

Beyond scope of practice

Events that participants described as catastrophic or unanticipated with large numbers of patients presenting to the ED for treatment were characterised by limited human resources (p. 132). For example, in a situation where there were not enough physicians per critically ill patient, nurses would undertake roles that doctors would normally do, such as intubation, suturing and inserting intravenous cannula. While in some jurisdictions nurses may undertake these roles, the nurses who participated in this study described these tasks as things they wouldn't normally do prompting them to work beyond their usual scope of practice. Another example provided by participants relates to administering narcotics. In this instance a doctor must prescribe the narcotic and two nurses must check and administer it. However, due to the lack of readily available nursing and medical staff, participants reported prescribing and administering narcotics without a prescription or double check. Nurses were driven to these behaviours by a need to help their patients and they had a perception that by undertaking these tasks they were providing

lifesaving or comfort treatment. In doing this nurses appear to have little thought for the legal ramifications or potential for poor patient outcomes.

The concept of nurses working beyond their usual scope of practice has received very little attention in the literature. This issue has been discussed in relation to nurses from Australia, China and USA who have worked outside of the hospital setting during a disaster (Cox & Briggs 2004; Arbon *et al.* 2006; Slepski 2007; Yin *et al.* 2011). However, there is no evidence in existing literature that nurses are working beyond their scope of practice during an emergency department response to disaster. A publication outlining core competencies for nurses involved in disaster response by Gebbie and Qureshi (2002, p. 50) does however, suggest that nurses may have to work outside their usual domain during disaster response, for example a nurse who usually looks after adults may have to look after paediatric patients. This suggestion however, is not closely aligned with the practice of participants in this study who made a conscious choice to undertake tasks they either did not have appropriate training in, knowledge or the jurisdiction to do.

The motivation behind nurses undertaking tasks that are beyond their usual scope of practice is the same motivating factor behind altering standards of care in disaster response; simply that there are not enough resources to manage the large volume of patients and their treatment needs. While there is evidence in the literature that nursing practice may change in disaster response due to having to work in a damaged space or a different space such as a decontamination tent, there remains no specific evidence that nurses are undertaking tasks they are not trained or legally allowed to undertake (Hammad *et al.* 2012; Cusack & Gebbie 2015). Most of the discussion in this field relates to reallocation of scarce resources and reducing existing standards of care as opposed to taking on additional roles that have potential for poor outcomes (Koenig *et al.* 2006; Hick *et al.* 2012; Schultz & Annas 2012).

Nurses in this study were very clear that they wouldn't be doing these things on a non-disaster day. They also implied that other staff were turning a blind eye to the

practice suggesting that it was universally accepted in the ED under these circumstances. This supports the suggestion made later in this chapter that a disaster is something extraordinary. It is difficult to make generalisations based solely on the behaviour of nurses who participated in this research particularly given that this behaviour has not been documented elsewhere. That it has not been discussed in the existing literature though doesn't mean that it is not happening, it could mean that this behaviour hasn't yet been uncovered. This finding simply highlights the need for further research to explore the frequency of this behaviour and the potential ramifications of it if nurses are working beyond of their usual scope of practice.

Lived other

In an unlikely world with no patients, nurses would cease to exist because the entire premise of nursing is to care for others. As a collective group of individuals, patients become one entity central to nursing practice. Also essential to nursing in the ED on a daily basis are a nurses' colleagues. Even in the most remote ED a nurse would not be able to effectively practice in isolation. An entire team consisting of a variety of health professionals is essential to effectively manage the care of a patient, particularly if they are significantly unwell. The size of the team can vary and is dependent on a number of factors including the size of the ED, the number of available staff and the medical needs of the patient. The emergency nurse therefore cannot function on a daily basis independently of patients or colleagues so together they form a community.

Nurses' clearly share strong bonds with their colleagues, because this pre-existing relationship is a driving force behind their motivation to participate in disaster response. While patients also serve as a driving force motivating nurses to respond to disasters, work beyond their scope of practice and work long hours without taking breaks, the relationship between nurses and patients compared with the one they have with their colleagues is less reciprocal and is based on a sense of duty. This highlights a juxtaposition between the lived body – how our body is experienced with respect to the phenomenon (van Manen 2014, p. 304) and the

lived other – the relation we maintain with others in the interpersonal space we share with them (van Manen 1990, p. 104) because there is a distinct focus on others during a disaster response while awareness of self is more or less absent throughout the experience. van Manen (2014, p. 303) refers to this as non-relational relation where the self is erased in experiences of sacrifice, total dedication and service. While characteristic of the experience, it is likely that this is present also in the everyday experience of working as a nurse in the ED, simply because the community of nursing colleagues and patients is pre-existing and nursing, by its very virtue is a caring profession the motive of which is to help others. Additionally, as discussed previously (p. 120) there is evidence that nurses regularly put aside their own needs by skipping work breaks to provide patient care.

Disasters are different

This research highlights that there is something about disaster response that separates it from the everyday experience of nursing in the ED. That there is something different about disaster response is highlighted in the following discussions about the nature of disaster response and what constitutes a disaster for emergency nurses.

Lack of awareness

Through the moments of *Notification* (p. 88) and *Waiting* (p. 93) nurses describe feeling shocked and disbelieving when they are first notified a disaster event. This reaction implies that nurses were not anticipating the event and could be interpreted in one of two ways; firstly that nurses might not be anticipating the event in that moment but still remain aware of the possibility of such an event occurring, or it could be that they had not anticipated the event at all. Supporting this interpretation of the findings is that in the final moment of *Reflection* (p. 100) nurses described a general attitude of 'it won't happen to us'. This attitude at an organisational level resulted in a decreased focus on preparedness activities. Furthermore, in the moments of *Waiting* (p. 93) and *Patient Arrival* (p. 95) nurses describe feelings of fear and anxiety as they speculate on whether they have

acquired the appropriate skills, knowledge and experience to cope effectively with the forthcoming response. Additionally, in these moments nurses describe anticipation in relation to what role they will be doing and what the response will be like. All of this implies that nurses had a limited awareness of what disaster response would be like. Collectively, this demonstrates an overall lack of awareness regarding the likelihood and expectations of disaster response. This is echoed in my pre-understanding of the phenomenon (p. 46) as I have written that I believe we are limited by our imagination and cannot understand the experience until we have had it.

This reaction is also evident in the existing literature that describes the experiences of nurses working in the ED during a disaster response. Similar to nurses who participated in this research, Frank's publication on the experiences of nurses responding to 9/11 also describes the disbelief and shock nurses experienced when they received notification of the event (2001, p. 546). Frank also described fear associated with not being able to manage all of the patients coming in to the ED (2001, p. 542). Similarly Riba and Reches (2002, p. 3) describe fear and anxiety among nurses in the period of waiting for patients to arrive to the ED and in relation to not being able to function properly, a feeling which is more evident in junior nurses. Taylor *et al*. (2003) and Nadworny e*t al.* (2014) also report a questioning of existing capabilities and feelings of fear, anxiety, apprehension and disbelief among ED staff as they receive notification of the Bali Bombing and Boston marathon bombing respectively. Furthermore, other articles also report an initial shock and overwhelming feeling experienced by ED staff as patients present to the ED (Amundson & Burkle 1995; Collins 2001; Frank 2001, Nadworny *et al*. 2014).

The findings of the research paired with what is presented in the existing literature indicates a general complacency and lack of awareness among emergency nurses with regards to the likelihood of a disaster occurring and the expectations of the individual nurses in the ED response to a disaster. Chapter One of this thesis however, emphasises that nurses working in the ED are among the first healthcare workers to care for people who have presented to the hospital seeking treatment

and refuge after a disaster. When this is considered in relation to what is known about disasters; that they occur with reasonable frequency and no continent is immune, it becomes evident that emergency nurses should anticipate the likelihood of disaster response at some point in their working life. Nurses should consider this likelihood in relation to the geopolitical causes of disasters such as political instability, geographical location in the world (for example along the ring of fire) or other community specific risk factors, which heighten the likelihood of a disaster event occurring in their community.

Based on the reactions of emergency nurses in the initial stages of disaster response, this study supports the existing belief that emergency nurses' lack awareness regarding disaster response. However, it doesn't necessarily support the belief that nurses are ill-prepared for disaster response. The word prepare according to the Oxford Dictionary (2016) means 'to make ready or able to do or deal with something', therefore being ill-prepared means that you are not ready or able to do something. While there is much evidence in the literature to suggest that emergency nurses are ill-prepared in terms of having limited education opportunities or previous disaster response experience, there is no evidence that this has any bearing on their ability to respond once they actually participate in disaster response. This research and the existing literature consistently demonstrates that despite initial shock or fear, emergency nurses get on with the response and appear to get through the response. This therefore raises questions over the validity of disaster education and training rather than nurses' level of preparedness by suggesting that disaster education may not be relevant and that nurses' already have the tools they require to respond effectively to disasters. When considering this though, it should be noted that the research only reports on the experiences of nurses who have participated in disaster response (as opposed to those who have chosen not to).

Capacity to respond

Returning to the discussion about the definition of disaster presented in Chapter One (p. 1), a disaster is recognised globally as something that overwhelms existing

capabilities and requires outside assistance to manage. When considering this in light of the research findings a disaster occurred for the participants when the number and acuity of patients exceeded the existing space or the available human and material resource. This concept is recognised as surge capacity, a significant increase in the demands placed on an ED reflected in rate of patient presentations, waiting times, patients queued and ambulance diversions (Bradt *et al.* 2009, p. 8). To manage this more space is created for the patients and more human and physical resources become available thus illustrating the need for outside assistance to be employed to manage the disaster response.

Common to most of the disaster definitions presented in Chapter One (p. 1 – 6) is that the overwhelming nature of disasters occurs as a result of a situation or event (WADEM 2002; WHO 2016). However, it becomes evident through this research that the ED can also become overwhelmed to the point that it requires outside assistance where no identifiable event has occurred previously. Nurses involved in this research described how non-disaster days in the ED feel like a disaster because they are overwhelmed by patients. Furthermore participants discussed this in relation to the presence or absence of human and material resources that are required to support the response. In this scenario the ED may be faced with increased patient presentations or a greater number of more acutely unwell patients in a short period of time, by coincidence rather than a precipitating event. This causes the ED to become busy and overwhelmed but as there has been no precipitating event, the situation does not fall into classic disaster definitions and therefore may not be recognised as a disaster. As a result, the cascade that would ordinarily be initiated if the situation had been recognised as a disaster such as the creation of space or the availability of human and material resource does not occur. This has the effect of stagnating the situation and leaves nurses more or less in a state of limbo until something occurs to change the situation such as a sudden decline in patients or the implementation of outside measures.

This situation was illustrated by one of the participants in this research who was working in the ED during a response to a bushfire. The participant described how

the ED was already overwhelmed by high numbers of patients presenting during a heatwave which preceded the bushfire but due to the insidious nature of the heatwave a disaster was not recognised until bushfires broke out. At this time a chain of events was initiated and the hospital went on standby to receive patients, the irony being that following the declaration of a disaster the ED received fewer patients and nurses felt less overwhelmed than they did during the heatwave period. This non-disaster situation was also evident for participants who were involved in catastrophic disasters where the impact on the community is more dispersed and it is difficult for outside assistance to reach the hospital due to damaged infrastructure. Additionally, the hospital may be struggling to cope with treating patients due to continued effects of the event such as power outages and structural damage. In these examples the hospital and healthcare staff may be overwhelmed for a sustained period of time before outside assistance arrives. In their discussion paper on surge capacity for Australian hospitals Bradt *et al.* (2009, p. 16) also identifies that hospital surge is not necessarily a result of a precipitating event and can occur as a result of very busy days and aggravated by access block.

On the flip side of this is when a disaster has impacted the community but the effect to the ED is negligible. This was commonly described by nurses who were involved in slower onset events such as bushfire or flood. Nurses in these situations described how a disaster had been identified as a result of the impact on the surrounding community, causing the ED to go on standby. The usual preparedness activities took place in anticipation of an influx of patients that never arrived, or did not arrive in vast numbers. As the ED had been emptied of existing patients and had not received any from the disaster, the ED remained on high alert and nurses in a hyper alert state for some time before the response was downgraded. In this situation the impact to the community was significant but the effect of the disaster to the ED was minimal and therefore did not constitute a disaster for emergency nurses.

The challenge is that ED disaster plans are often written for and initiated after a significant event has occurred. Once a disaster has been identified as such a cascade

of events is set in motion. The ED goes into disaster mode and more staff are called in or sent to the ED, space is made available by moving patients out of the ED or by creating extra areas in the hospital to manage patients and extra material resources are sent to the ED such as blood packs, intravenous fluids and bandages. The effect of providing assistance in this manner begins to resolve an overwhelming situation, which without extra support or a change in the causative factors (such as too many patients presenting to the ED) potentially remains untenable.

This discussion highlights a few interesting factors that help to define disaster from the emergency nursing perspective. Firstly, that although there may be a disaster occurring in the community, the ED may remain relatively unaffected, thus not constituting a disaster for the ED. Second, an identifiable precipitating event does not have to take place for the ED to become overwhelmed and third, a disaster can be identified as such by an emergency nurse if the existing capacity of the ED is overwhelmed and outside assistance is required to recover. There has been little attempt to really try and understand what constitutes a disaster for the ED in the existing literature. The one author who does try to define disaster from the ED perspective defaults to existing definitions of disaster or the impact different disaster types may have on the ED (Zibulewsky 2001).

Impact

The experience of working as a nurse in the ED during a disaster extends beyond discharge of the last affected patient. Nurses in this study continued to relive the experience after the event had finished and at the beginning of subsequent events. This was demonstrated through flashbacks, hallucinations, fatigue and poor sleep. Nurses who participated in this research who have been involved in more than one disaster response experienced flashbacks with the commencement of subsequent disaster responses. Other nurses reported vivid memories of the event, feelings of grief and guilt associated with the disaster response and fear related to the potential to be involved in future disaster response. The ongoing effect of involvement in disaster response was further highlighted during the interview process where participants became emotional while re-telling their experiences.

These and other symptoms such as; intrusive memories, nightmares, exaggerated startle response, insomnia and irritability are not unusual in people who have experienced a traumatic event (Harvey *et al.* 2015, p. 24). Post-traumatic stress disorder is a psychiatric disorder characterized by an acute emotional response to a traumatic even or situation such as actual or threatened death or injury (Harris *et al.* 2014, p. 1387). Furthermore, as is the case with emergency nurses, exposure to the event could be through experiencing the event, witnessing the event occurring to others or experiencing repeated exposure (Harris *et al.* 2014). The literature reports a high incidence of PTSD among the emergency nursing population (Laposa *et al.* 2003; Mealer *et al.* 2009; Adriaenssens *et al.* 2012). This phenomenon is largely attributed to the fact that emergency nurses are routinely exposed to traumatic situations including severe injury, death, suicide, suffering as well as frequent exposure to physical and verbal assault (Adriaenssens *et al*. 2012). As a result, the incidence of PTSD among emergency nurses is higher than in other nursing specialties and the general population (Lavoie *et al.* 2011; Adriaenssens *et al*. 2012).

There were two elements that were common between participants of this research who reported signs of PTSD. First, they had all responded to sudden onset events that significantly overwhelmed the ED and second, it was often the first disaster response for either the individual or the ED. Generally nurses described these responses as being chaotic and without any clear process or systems in place. The lack of previous experience of the individual and the chaotic nature of the response meant the events were somewhat unexpected and nurses felt unprepared.

There is a significant paucity of literature, which explores the prevalence, and/or effects of PTSD amongst nurses who have worked in the ED during a disaster response. Amundson and Burkle (1995) state that nurses in their ED experienced 'normal' PTSD symptoms but did not elaborate further except to say the symptoms were managed by the hospital through support and debriefing sessions. In contrast, Anteau and Williams (1998, p. 55) found that nurses largely declined debriefing and had to be physically escorted to critical incident stress management even though

they were displaying signs of stress following the response. Anteau and Williams (1998, p. 55) also describe how the emotional effects of involvement in disaster response have continued well past the event. Through the discussion of literature in Chapter Two it is evident that emergency nurses who participate in disaster response experience PTSD or PTSD like symptoms. The only study found that specifically explores PTSD in emergency nurses who have responded to disasters is by Battles (2007) who assessed the prevalence of PTSD symptoms in registered nurses who had worked in the emergency department in response to Hurricane Katrina in 2005. Battles (2007) found that 20% (n=1) of nurses who participated in the study (*n*=5) displayed PTSD symptoms. The sample population of this study was very small and it is therefore impossible to make any wide generalisations about this data. Supporting findings of psychological impact of disaster response is research undertaken by Maunder (2004) who found that nurses experienced more stress than physicians as a result of response to SARS in Toronto, Canada.

In the moment of *Reflection* (p. 100) nurses involved in this research describe how they allow themselves to feel again towards the end of the response and after the response has ended. At this time nurses experience emotions that they have ignored during the event and they reflect on the experience they have had. Reflection may be in relation to how they performed during the event or it may be a deeper reflection on the meaning of the experience. For some nurses their involvement in the disaster response was the highlight of their career, as if this is what they were put on the planet to do. For others the moment of reflection led to a more philosophical outlook associated with why the event happened and what this means in terms of their own existence in the world. That nurses are reflecting on their experience is a good thing. This is how we grow as nurses and as individuals in our personal life. Through reflection we can develop understanding and meaning in an experience. Reflection on the response can lead nurses to identify lessons that they can use to better prepare for future response. That the experience elicits this response suggests not only that nurses' feel that they have just undergone something of significance but that a disaster is different to the everyday. If nurses'

were familiar with the experience, they would not be prompted to reflect on the experience. This reflection is indicative that nurses are engaging more thoughtfully with the world around them.

This discussion emphasises the impact that participation in disaster response has on nurses. The outlay of emotion after the event and the tendency for stress reactions further highlights that there is something different about disaster response and is suggestive of an emotional impact. Furthermore, that nurses are prompted to reflect on their experience implies that they are trying to make sense of the experience. It is unlikely that they would be prompted to do this if the experience was familiar to them. What is not clear from the findings of the research and in existing research is if the emotional impact has any lasting negative consequences.

Lived space

Nurses who participated in this research describe how their experience of space changed throughout the disaster response. This occurred in one of two ways; where the familiarity of the ED space was altered or where nurses were required to work in a completely different space but still as part of the ED response. In regards to the altered ED space nurses involved in this research described how the context of the experience changed the familiar environment of the ED. This was evident where an influx of patients and other people such as other hospital staff, loved ones, emergency responders and media crowded the ED. In this changed environment nurses had to navigate the crowded space and the raised noise levels. This can place an extra strain on nurses who are simultaneously trying to cope with a large influx of patients alongside changes to the familiar space they are accustomed to working within. Another example was with a higher number than usual of critically unwell patients. In this case patients that would ordinarily be seen and treated by a small team in a dedicated resuscitation room, were seen and treated with fewer staff in a different room. While still in a familiar environment this places nurses in an unfamiliar situation where lifesaving equipment and support from colleagues is not as readily available.

Nurses who participated in this research also described how although they remained part of the ED response to the disaster they had to work in a completely different environment such as a decontamination tent, outside triage or another hospital. This can because the ED is unable to cater for a large number of patients, in terms of physical space or because patients are contaminated. For reasons such as these patients need to be re-directed to other parts of the hospital to streamline the response. Additionally, nurses needed to look after these patients are then also re-directed to other areas as part of the ED response. This places nurses in an environment that they may be unfamiliar with such as an outdoor decontamination unit, outside triage or a receiving area for walking wounded patients. In another example evacuation of a hospital required nurses to move to another health facility. This experience placed nurses outside of their comfort zone requiring them to simultaneously manage the disaster response alongside familiarising themselves with a different environment and staff that were previously unknown to them in a relatively short space of time.

The findings of this research that the ED space is altered or completely changed during a disaster aligns with evidence in the existing literature. For example, following the Christchurch earthquakes the ED was directly impacted causing damage to infrastructure but was also affected by continued aftershocks and power outages (Dolan *et al*. 2011; Richardson *et al*. 2013). Other literature describes similar affects to the ED following disaster events which include electrical outages and phone line disruption (Frank 2001). In relation to their response to the Bali bombing Taylor e*t al.* (2003, p.5) writes; 'This small room was now expected to accommodate more than 25 nurses and doctors and 5 patients, so running across the room to get equipment in a hurry was nearly impossible'. Additionally, there is evidence in the litertaure that nurses work outside the ED during a disaster response such as an outside triage area or decontamination unit (Amundson & Burkle 1995; Anteau & Williams 1998; Chavez & Binder 1995; Dolan *et al*. 2011; Frank 2001; Leslie *et al.* 2001; Richardson *et al*. 2013; Tham 2004; Timm & Reeves 2007). Furthermore, during a disaster nurses might be required to work in other

spaces outside of the ED, due to damage to the hospital or as part of a strategy to manage a large influx of patients (Amundson & Burkle 1995; Chavez & Binder 1995; Anteau & Williams 1998; Mickelson *et al.* 1999; Roccaforte 2001; Palmer *et al*. 2003; Taylor *et al*. 2003; Tham 2004; Behney *et al.* 2006; Dolan *et al*. 2011; Ardagh *et al*. 2012; Little *et al*. 2012).

The impact, if any, caused to emergency nurses as a result of an altered or changed ED space is unclear. However, it can be assumed that as the existing ED space is one that is familiar to nurses who work within it every day, the changes that occur as a result of the disaster response transform the space into something unfamiliar. Additionally, nurses may be moved to an area they are not familiar with. The unfamiliarity that is created as a result is what separates disaster response from the everyday.

The ED is an ever present construct of an emergency nurses' work life. Every day the emergency nurse enters the ED space and largely within the confines of that environment they conduct their daily nursing practice. Examples of working outside that space would be rare but may occur for example when an emergency nurse is transporting a patient to another part of the hospital for more definitive treatment. There is no doubt that an emergency nurse can continue to practice and provide patient care outside the ED. The ED space is therefore not an essential requirement, but it could certainly be seen as an extension of emergency nursing practice. For example, it is into the ED that patients enter when they require treatment. Additionally, the ED houses resources that support the diagnosis and treatment of patients. For example, ED staff who have the expertise to provide emergency care are situated in the ED and specialists from other areas of the hospital enter the ED to provide further patient support. Also housed in the ED are vital medical gasses such as oxygen that is piped through the walls, beds for the patients and a vast array of other physical tools necessary to manage and treat a variety of patient presentations.

Emergency nurses are therefore more or less dependent on this space to support their nursing practice. As a result they are familiar with the ED space because they enter it and work within it throughout their work life. Through familiarity the nurse comes to know where to find things and how to use the space. In this respect the structure of the ED becomes taken for granted. However, van Manen (1990 p. 102) talks about how we become the space we are in. He states for example, how a new space such as a foreign city may affect how we feel generating a sense of feeling lost, strange, vulnerable, excited or simulated. In the same way, the ED can have an effect on how the emergency nurse feels. For example, on their first day of work, a junior nurse may feel lost and overwhelmed by the noise and busyness of the ED. After many years the same nurse might associate the space with a feeling of exhaustion due to the countless hours spent in the ED rushing around. Equally, nurses may view the ED space with affection due to the many years spent within it and the memories that have been generated as a result. How we experience the space is dependent on many factors and is varied from one person to another due to our different worldviews.

When we consider the ED space in the context of this research it is evident that the ED space is altered or completely changed as a result of a disaster response. Either the existing space is altered as a direct consequence of the disaster event such as with an influx of people, structural damage or interruption to medical gas, power and lighting, or the space changes completely because nurses are required to work in a completely different area. Additionally, nurses who volunteer to work in the ED or who have been deployed to the ED to support the response, will also be working in an unfamiliar environment.

Disaster response forces the emergency nurse to view the ED space differently. Where before the space was taken for granted and familiar, suddenly an emergency nurse becomes aware of the space they are working in by virtue of the fact that it has changed and things that were usually readily at hand are now absent thus the familiarity of the everyday is altered. Nurses' experience of space during disaster

response is unique and this is a significant factor that sets disaster response apart from the everyday experience of working in the ED.

Summary

This chapter moves beyond a description of the findings that were presented in the previous two chapters to explore the meaning that is embedded within the experience of nursing in the ED during a disaster response. The discussion highlighted characteristics of the phenomenon as it was experienced by nurses who participated in this research and included insights from the existing literature. This chapter considers the characteristics of disaster response and identifies two key findings that have emerged from the research. The first finding is that emergency nurses are motivated by altruistic endeavours whereby they want to do what they can to help others regardless of any potential negative consequences to their self. The second key finding highlights aspects that are unique to the experience of disaster response, highlighting that disasters are different to the everyday experience of working in the ED. The following chapter will conclude this thesis by providing an overview of the research and key findings and presenting recommendations based on the research findings for future research, policy development and clinical change.

CHAPTER EIGHT: RECOMMENDATIONS & CONCLUSIONS

Chapter Overview

The aim of this research was to respond to the question; '*What is it like to work as a nurse in the ED during a disaster response*?' Arguably there are many methodological paradigms within which an approach to research could be situated in order to respond to this question. However, by situating the research approach within a Hermeneutic Phenomenological paradigm a close representation of the experience is presented. This is because this approach allows the phenomenon to be uncovered through the experience of nurses who have actually worked in the ED during a disaster response. Furthermore, a Hermeneutic Phenomenological approach facilitates further interpretation, to draw out the meaning within the experience. Until this point, this thesis has presented the journey that was undertaken from the conceptualisation of the research through to the findings that emerged out of the research process. Following a recap of the research process this final chapter will present the limitations of the research and a summary of the key themes leading to a discussion of what it means to work as a nurse in the ED during a disaster response. This chapter will conclude with recommendations from the research that will be useful for future research direction, policy and practice change.

Reflection on the research process

As with most phenomenological studies this one started with wonder (van Manen 2014, p. 37). A personal desire driven largely by my own experiences as an emergency nurse led me to pursue a response to the research question: *What it is like to work as a nurse in the ED during a disaster response?* As stated by van Manen (1990, p. 46), the problem with phenomenological inquiry though is not that we know too little about the phenomenon we wish to investigate, but that we know too much, in that our pre-understandings and existing bodies of scientific knowledge predispose us to interpret the nature of the phenomenon before we

have even come to grips with the significance of the phenomenological question. A statement of my own pre-understanding of the phenomenon (p. 46) and continued attention to what is already understood by the researcher about the phenomenon is therefore an essential part of the research process that aids in transparency of the research findings.

It has been well documented that disasters are becoming increasingly frequent and are having a significant impact on humans. The impact a disaster has on the health of a community demonstrates the need for an immediate response by health care professionals. The inclusion of emergency nurses as part of this initial response is reported across a wide body of literature and situates emergency nurses as vital in the mitigation and response to disasters. Despite this, literature that is written specifically from the emergency nursing perspective suggests that emergency nurses are ill prepared for disaster response. This knowledge however, is derived from a relatively small number of publications that present the experience of nursing in the ED during the response to one disaster or disaster type (Collins 2001; Frank 2001; Yip 2002; Richardson *et al*. 2013; Lenehan & Hughes 2014) or explore the perceptions of emergency nurses related to disasters (French *et al*. 2002; Battles 2007; Considine & Mitchell 2008; Duong 2009; Hammad *et al.* 2010; Mitchell *et al*. 2012; Whetzel *et al*. 2011; Hammad *et al.* 2012; Arbon *et al*. 2013a; Arbon *et al*. 2013b; Ranse *et al.* 2013; Bell *et al*. 2014;Seyedin *et al.* 2015; Alaharani & Kryatsis 2016; O'Connor & Hammad 2016). This research study is therefore unique in that it explores the collective experiences and perceptions of nurses who have worked in the ED during a range of different disaster events and across different geographical locations. To date, no other publications were found that describe the collective experience of nursing in the ED across different disaster types.

This highlights two significant gaps in our understanding of nursing in the ED during a disaster response. Firstly, what is currently known about the experience is drawn from a relatively small number of publications that explore the response to singular events or hypothetical situations. Second, much of what we currently know about the experience is derived from descriptions of the experience of nurses with little

consideration of the meaning that is embedded within the experience. By drawing on the experiences of nurses from around the world who have responded to different types of disasters this research identifies commonalities in the collective experience and presents the meaning that is embedded in the experience of working as a nurse in the ED during a disaster response.

The research is underpinned by the tradition of Hermeneutic Phenomenology. Phenomenology requires the researcher to garner the lived experience of humans and present it in a meaningful way. With the methodology underpinning the research it was possible to use the voices of those who have experienced the phenomenon to raise awareness and understanding in those who haven't had the experience and to prescribe meaning to something all emergency nurses could potentially encounter at some point in their working life. This approach to research within a Hermeneutic Phenomenological paradigm is largely informed by van Manen's perspective and as such, evolved from the research question itself.

Thirteen nurses from different countries shared their lived experiences of working in the ED during a disaster response. The phenomenon of working as a nurse in the ED during a disaster response as it was experienced by the nurses who participated in this research emerged through two different processes. A thematic analysis of the participant transcripts resulted in five distinct Moments of Disaster Response; *notification, waiting, patient arrival, caring for patients* and *reflection*. The moments of disaster response highlighted through this research culminate in a description of what it might be like to work as a nurse in the ED during a disaster response (p. 105) which was created from the experiences of nurses who participated in this research. The aim of this account was to create something tangible that could resonate with any emergency nurse thereby allowing them to experience what the experience is like through imagery. A guided reflection on five existential themes; *relationality, corporeality, spatiality, temporality* and *materiality* led to a second perspective of the experience as it is situated in our common lifeworlds.

Reflection on these two aspects of the participant experience and consideration of what is currently known about the phenomenon from existing literature, leads to a discussion in Chapter Seven of characteristics that are common to the shared experience of the phenomenon. The participant experience that emerges through this thesis aligns in many ways with what is already known about nursing in the ED during a disaster. The experience of nurses who participated in this research correlate with the literature in regards to emergency nurses' motivation to respond, the anxiety nurses feel on notification, the altered space in the ED and similarities in the skills used on a non-disaster day and a disaster day. Reflecting back on my statement of prior understanding (p. 46), the participant experience also aligns with some assumptions that I held in regards to the phenomenon. These were that emergency nurses share a bond as a unique sub group in the culture of nursing, those working in the ED are dedicated to their work and seem to continue to operate with little complaint no matter how hard they are pushed, there are existing limitations in nursing knowledge and awareness of disaster response, and a disaster event will be absorbed by the staff, including nurses who will continue to operate under difficult circumstances. Although there are correlations between this research and what is already known about the topic, this study extends our current understanding of the phenomenon. A summary of the key themes and the new knowledge which emerged from this research is presented below.

Summary of key themes

The findings from this research were presented in Chapter Five and Chapter Six and a discussion that considers all of the findings to explore the meaning that emergency nurses attribute to the phenomenon is presented in Chapter Seven. This section summarises the two key themes that emerge from the findings; first that emergency nurses have an innate need to help and second that disasters are different. This discussion will encapsulate the experience of working as a nurse in the ED during a disaster, highlight the new knowledge that has been uncovered by this research and lead into recommendations from this research.

Nurses need to help

A strong drive to participate in disaster response was demonstrated by nurses who participated in this research. Nurses' motivation to participate was demonstrated in a number of ways through their initial desire to respond to the disaster, continued enthusiasm to participate in the disaster response and working beyond their usual scope of practice. All of these behaviours are underpinned by a strong desire to help those who are affected by the disaster and also to support their ED colleagues. It is not possible to make generalisations based on these findings because the research only explored the experience of nurses who participated in disaster response and not those who chose not to. However, this finding does align with what is currently known about emergency nurses' motivation to participate in disaster response.

That emergency nurses are highly motivated to respond to disasters is a good thing considering that the nature of working in the ED places them at the forefront of disaster response as a first point of contact for people affected by disasters. However, this key finding raises a few points and key issues for further exploration related to some of the nursing behaviours which are driven by altruistic endeavour such as volunteering, working beyond scope of practice or skipping work breaks.

Nurses who participated in this research described going to work as soon as they heard that there was a disaster. This finding also correlates with what is currently known about emergency nurses and disaster response. This behaviour has a number of positives in that nurses will be available to boost the human resource in the initial stages of the response and they will also likely enhance the existing skill mix to include more experienced staff in the response. Furthermore, nurses feel comforted working with colleagues they have previously worked with because they know their abilities and can trust them. There is a two-fold implication to this behaviour though. If nurses have not discussed their decision with the ED, something that is not apparent through the research or the existing literature, their presence may encumber the ED, particularly if the ED is already managing or has systems in place to manage the response that do not include volunteer health staff.

So, if this has not been considered in existing disaster plans, the presence of volunteer nurses may become more of a hindrance then assistance. The other implication relates to ascertaining the credentials of nurses who are unknown to the ED they are presenting to. An additional consideration associated with this behaviour is that if all nurses are volunteering in the early stages of the response, the pool of nurses available to cover subsequent shifts, particularly if the response is prolonged, will be diminished. These implications demonstrate a need for further policy development in this area.

A central irony in nursing is that the majority of nurses perceive themselves as giving, caring people but find it hard to nurture themselves (Boyle 2011). This was demonstrated through nurses working long hours during disaster response and not having work breaks. There is no discussion of this in the existing literature on emergency nurses and disaster response but other research suggests that this behaviour leads to fatigue and poor patient outcomes on non-disaster days in the ED. This highlights the need for a change in mind set that not only supports emergency nurses to take breaks but also recognises the importance of taking breaks during peak times.

A significant finding from this research that has not yet been highlighted in the existing literature regarding emergency nurse and disaster response is that nurses reported working beyond their usual scope of practice. In disaster responses where human and material resources were limited or not available nurses reported stepping in and undertaking roles and skills they would not normally undertake because they felt that in doing so they were saving lives or significantly improving patient outcomes. Where resources are lacking and nurses have acquired the appropriate skills and knowledge to undertake the skill, these actions may be lifesaving. However, the clear implications associated with this behaviour are that nurses may not have the appropriate skills and knowledge to safely carry out the task or recognise any adverse effects thus putting the patient at risk and the nurse at risk for litigation if something goes wrong. This highlights the need for further research that explores the prevalence of this practice. Additionally, policy change

needs to ensure not only that nurses are well supported in disaster response and therefore don't need to take such actions but are also protected if they are forced to work beyond their usual scope of practice.

This research highlights the value of collegial relationships in the ED prior to and during disaster response. Nurses who participated in this research placed importance on existing bonds between themselves and their ED colleagues. A desire to support colleagues was a motivating factor behind nurses' decision to participate in the disaster response. Existing bonds between ED colleagues also serves as a source of strength during and after the disaster response. During the response working with colleagues whose skills and abilities are already known to each other is a source of comfort. As the response comes to an end comfort was found by nurses in being surrounded by people who are familiar to them and who had shared the same experience. Also what falls out of this research is that the bonds that nurses share with their colleagues are not restricted only to nursing colleagues. This serves as a reminder that nurses do not work in isolation in the ED but as part of a cohesive multidisciplinary team. This finding supports the need to focus on multidisciplinary disaster training to strengthen existing bonds and promote a more efficient disaster response.

Disasters are different

Nurses who participated in this research described shock and disbelief on receiving initial notification that a disaster had occurred. This reaction suggests that nurses were surprised when they found out about the disaster and had therefore not anticipated the likelihood of a disaster occurring. As nurses waited for patients to arrive to the ED they described feeling nervous, anxious, worried, scared and fearful. Nurses also began to question if they had the appropriate skills and knowledge and whether they or their department would be able to cope with the impending response. This reaction suggests that nurses were unclear what the forthcoming disaster response would entail. This could be related to either a lack of awareness or exposure to disaster response or it could be a well-founded fear based on past experience.

The points raised above highlight a lack of awareness around the likelihood of a disaster occurring as well as the expectations of emergency nurses in relation to disaster response but are not indicative necessarily of lack of preparedness for disaster response. As nurses who participated in this research reflected on their experience they identified factors that made them feel more or less prepared in the midst of the disaster response. There were four main factors that contributed to a feeling of being more prepared and therefore confident during the response:

- perceived preparedness of the hospital relating to having a functional disaster plan, systems in place and frequent disaster drills and exercises
- perceived previous experience of the hospital relating to previous disaster response or the ED's experience of managing trauma patients similar to those that presented to the ED during the disaster
- Individual preparedness as well as collegial preparedness associated with the relevancy of staff training provided by the hospital and personal experience related to seniority and years of experience of nurses
- having time to prepare for the influx of patients and having a relatively empty ED at the point of notification

On the other hand factors that contributed to feeling less prepared and therefore less confident included:

- a perceived lack of preparedness such as plans that were not relevant to the event
- a department that was already overwhelmed when the disaster commenced
- lack of qualified staff
- complacency with regards to planning by individuals and organisations

- lack of experience through either disaster response or drills and exercises that simulate disaster response.

In considering this, it appears that what supports emergency nurses to feel confident going into a disaster response is a perception of preparedness. If nurses feel that the hospital has a current and relevant disaster plan or that they and their colleagues have had adequate exposure through previous disaster response or disaster drills and exercises which suitably simulate disaster response, then nurses will feel more confident. This finding supports the need for nurses to participate regularly in disaster drills and exercises which simulate disaster response in a realistic fashion.

While it is evident that the feeling of uncertainty displayed by nurses who participated in this research stems from a lack of awareness there is no definitive evidence to suggest that emergency nurses are unprepared for disaster response in terms of their ability to participate. Nurses in this research have demonstrated motivation to respond to disasters and a desire to help that suggests that they are aware that they possess the appropriate skills required for disaster response. That nurses are concerned about their level of preparedness and feel that they require more training and education, more than likely indicates that they require a better understanding of what disaster response entails. This highlights the need for disaster training to focus awareness on what a disaster is and the role of the ED in the response, rather than training on how to work in a disaster. Doing this may support nurses to feel more confident going into a disaster response. When consideration is given to the fact that disasters are increasing in frequency and impact, no community is immune and that the ED is at the front line of the health response to a disaster, all emergency nurses need to anticipate the likelihood of their involvement in disaster response in the future.

The findings of the research provide insight into what constitutes a disaster for emergency nurses and further highlights that this may be different to what constitutes a disaster outside of the ED. That a disaster is different from other days

in the ED is apparent through this research in a number of ways. Firstly, when a disaster is declared as such by officials or hospital administrators a chain reaction is initiated through which the ED acquires the necessary resources to manage the response. These resources may include staff from other areas of the hospital or outside the hospital to boost the response. Resources may also include material items such as suture trays and intravenous fluid, or it might be that the ED gains additional space by emptying the ED of existing patients or creating other spaces such as an outside triage area, decontamination unit or reception area for the walking wounded. The acquisition of additional resources indicates that something needs to change in order to manage the disaster response effectively thus implying that the response could not be managed without the additional support. This assertion is further supported through participant experiences where the ED has not received additional resources such as when a disaster hasn't been declared or when outside infrastructure has been overwhelmed by the event and additional resources cannot be readily supplied. In these situations the ED will remain in an overwhelmed state until outside assistance is received or until the situation resolves itself when patients stop arriving to the ED.

That a disaster is different from the everyday experience of working as a nurse in the ED is also highlighted through nurses' initial reactions and their reflections after the experience. In the initial moments of *Notification* and *Waiting* nurses describe reactions such as fear, anxiety and anticipation associated with their ability to cope with the response. Following the response nurses reflected on their experience some considering their involvement to be the pinnacle of their career, while others reflected on factors which enhanced or impeded their confidence. Furthermore, some nurses were left numb after the event and others were impacted emotionally. These reactions all imply that a disaster response is something out of the ordinary in the average working day of an emergency nurse. If the experience was a common one there would be very little motivation to reflect or question one's ability to cope.

Also highlighting that disaster response is different from the everyday is the changes that occur to the ED as a result of the disaster. Nurses described working in

an altered environment due to the high volume of people who are packed into the space, because of the inability to manage the high volume of patients in the existing space or because of damage to infrastructure. Additionally, nurses experienced working in an entirely different space such as an outside triage area, decontamination unit, reception area or another healthcare facility altogether. While changes to the existing space have already been identified in the literature, it remains unclear what impact these changes have on emergency nurses. On a non-disaster day the ED environment is familiar to the nurse and things they need are more or less readily at hand. When nurses' experience of the ED is altered in disaster response as a result of overcrowding or damage the space becomes unfamiliar. In this situation things that are usually present at hand and taken for granted are no longer present, for example the oxygen supply may be disconnected or rapidly depleted due to infrastructure damage and demand thus making it unavailable when normally it would be. Navigating these changes adds another layer of complexity to the experience of working as a nurse in the ED during a disaster response. This is further exacerbated when the environment is completely changed. In this context nurses may have to navigate a different work culture and way of being for example if they were deployed to another hospital.

Also highlighting that a disaster is different is the previous finding that nurses reported working beyond their usual scope of practice during disaster response. This finding was not found in the literature related to nursing in the ED during a disaster response. That nurses who participated in this research stated that they wouldn't do this on a non-disaster day suggests that from their perspective there is something different about a disaster response that makes it okay to do things they have not had training or experience with or are not allowed to do. As previously discussed this raises the need for further research into the frequency of this behaviour as well as policy change which protects nurses.

The ED response to a disaster event is not just a normal work day that has been amplified. This research demonstrates that a disaster event presents challenges and changes that make working in the ED in response to a disaster different from

working in the ED on any other day. The research also demonstrated that not all disaster events will have a corresponding effect on the ED. For example, nurses in this research discussed events that were having a significant impact on the wider community but very little impact on the ED in terms of workload. These events did however change the dynamic in the ED in that nurses reported that by readying the ED to receive patients that ultimately didn't come or weren't as severely injured as expected the ED was relatively empty and enshrouded by an unfamiliar quietness.

Busy days in the ED that have not been preceded by a declared disaster event present a different context. During the recruitment phase of this research one criterion for participation was that nurses had to have been involved in a disaster response. What constituted a disaster was not specified and so it was left to nurses to determine if they met the criteria. The events that nurses had participated in varied greatly. Some participants had been involved in well publicised events such as the 2002 Bali bombings in Indonesia, the 2009 Victorian bushfires and the 2010 Queensland floods both in Australia, the 2011 Tohoku earthquake and tsunami in Japan, the 2013 Boston Marathon bombing and the Westgate mall shootings in Kenya also in 2011. All of these events have been referred to as disasters in the public domain. However, the participants in this research also referred to other events that they considered to be a disaster, but which may not be considered a disaster within the constructs of existing disaster definitions. These events included ongoing conflict between Palestine and Israel, military and civilian vehicle accidents, a bomb threat and a chemical spill. Nurses also discussed days in the ED that were not preceded by an event but that simulated a disaster response in terms of the volume of patients presenting to the ED, the time critical aspect of the work nurses were doing and the altered ED environment. These findings suggest that there is a need to reconsider what constitutes a disaster for the ED so that emergency nurses can be better prepared for a wide range of events that may disrupt the usual functioning of the ED.

Recommendations

The recommendations of this research are applicable to nurses who work in emergency departments. As well the findings are useful for those who influence emergency nursing practice in disaster response such as policy makers, education providers and employers of emergency nurses. This study focused on the experience of a small group of nurses who have worked in the ED during disaster response and as such the findings are not necessarily reflective of every nurse's experience. However, the commonalities within the experience reflect what the experience might be like and provide grounds for further discussion and exploration of the preparedness and resilience of this group of nurses in relation to disaster response, in particular participation in terror attacks as these events formed the largest part of the participant experience. Recommendations that emerge from the findings of this research are specific to; nursing education, clinical practice and research and are discussed below as four distinct areas.

Culture shift

This research highlights the need for a culture shift within the emergency nursing profession to recognise the likelihood of disaster response, the importance of reflection and the need for breaks:

- *Probability of disaster response* – the nurses who participated in this research demonstrated a general lack of awareness around the likelihood of disaster response. As discussed in Chapter One, it is evident that disasters are increasing in frequency and emergency nurses are one of the first health care professionals to provide treatment to people affected by a disaster. This finding suggests a level of complacency around disaster response and a need for a culture shift within the emergency nursing community to recognise and respond to the likelihood of emergency nurses being involved in disaster response during their careers.

- *Promote reflection and debriefing* – Nurses who participated in this research described a process of reflection that occurred after their involvement in the disaster response. Through this reflection it becomes apparent not only that a disaster is different from the everyday in the ED but also factors that enhance nurses' confidence in disaster become visible. Therefore a reflective outlook can be very beneficial to our understanding of disaster response. Reflection on the experience needs to occur as soon as possible after the event while it is fresh in people's minds. Even if it is a quick staff debrief where main points are recorded and discussed later. Doing this allows staff to determine what aspects of the plan worked and what didn't while it is strong in their minds. This type of reflection provides the perfect opportunity to update the plan in preparation for future disaster response. Furthermore it will improve our understanding of disasters so that systems can be improved and better support can provided.

- *Need for self-care* – Nurses who participated in this research describe working long hours without taking breaks or even being aware of their need to take breaks. This behaviour can potentially be unsafe as fatigue in nurses can cause poor patient outcomes. Furthermore, in protracted events, if the majority of staff work in the initial stages of the response or become exhausted there may be a deficit of available or well rested staff for subsequent shifts. A culture change needs to occur so that nurses encourage each other to take breaks as required and so that nurses feel supported if they do take breaks.

Appropriate disaster training

An initial anxiety and fear expressed by nurses who participated in this research following notification of a disaster highlights not only that they didn't anticipate the response but that they had a limited awareness around what a disaster response is and what is expected of them. At no point did nurses who participated in this research declare that they didn't have enough skills or knowledge to respond. This finding is in direct contrast to the dominating sentiment in the existing literature on emergency nurses and disasters that emergency nurses are underprepared for disaster response. This removes emphasis away from global disaster education or training that teaches nurses what to do in a disaster and places emphasis on the need for targeted training that is hospital or facility specific. To better prepare emergency nurses for disaster response, disaster training needs to take into account the following factors:

- *Local factors* – these include likely hazards in the local area, the likelihood for disasters that are relevant to those hazards, the plans that are currently in place to manage a disaster response, how the ED will change and what role nurses will be likely to undertake in a disaster response.

- *Awareness raising* – focusing on raising awareness of the likelihood of disaster response and recognition of aspects of working in a disaster response which are different from the everyday.

- *Relevant and frequent disaster drills* - disaster drills that simulate actual events need to be conducted with relative frequency to ensure that the disaster plan remains relevant and up to date and that staff know how to implement the plan.

- *Multidisciplinary approach* – the emphasis on collegial bonds throughout the findings of this research and in the existing literature reflects the team environment that is evident in the ED. Drawing on this, collegiately could facilitate more effective cross disciplinary training, which in turn could enhance disaster response.

Policy Development

Nurses who participated in this research describe how on finding out about the disaster, they immediately went back to work to provide assistance with the response. They seem to do this without confirming with the hospital if their presence is needed. Whether this is because they couldn't contact their manager in the midst of the disaster or just that they didn't is unclear. Additionally, their reason for responding is unclear in terms of whether there is a requirement for their presence as part of a pre-determined response or whether their decision to respond was an impulsive reaction to news of the event. This suggests the need for individual organisations to consider staff volunteerism in the initial stages of a disaster, particularly in regards to protracted events where staff will be required to fill subsequent shifts. This finding aligns with what is known about nurses' behaviour in the existing literature which reports on healthcare volunteers to hospitals during disasters suggesting this is characteristic of disaster response. Policy development should also occur more broadly to support hospitals when large numbers of healthcare professionals volunteer in the initial stages of a disaster response. Policy also needs to be implemented to facilitate rapid verification of healthcare staff so that they can be used in the response, particularly in catastrophic events where hospitals are in desperate need for human resource in the initial stages of the event.

Future research directions

This research enhances what we know about nursing in the ED during a disaster response, but it is only the 'tip of the iceberg'. Further research needs to be

undertaken to explore key findings uncovered by this research study which have had little previous mention in the existing literature;

- *Altered space* – both nurses who participated in this research and the existing literature highlight that the ED changes as a result of disaster response. This may be due to overcrowding, damage caused directly by the disaster event, lack of capacity to manage patients in the existing ED and therefore a need for nurses to work in other areas which are still considered part of the ED response. What is unclear though is what effect the altered ED has on nurses. It is evident the environment becomes less familiar creating a challenge for nurses, but future research will help to generate an understanding of how this impacts nurses as well as patient outcomes.

- *Nurses working beyond their usual scope of practice in disaster response* – this research highlighted that nurses sometimes felt the need to work beyond their usual scope of practice during a disaster response applying skills they were not trained to do, do not have experience in or are not allowed to do. Further research needs to explore the frequency and circumstances around nurses working beyond their scope of practice during a disaster response in the ED setting. Further research or dialogue on this topic needs to consider whether nurses need to be prevented from working outside of their scope of practice or whether they need to be protected if they do. Furthermore, patient outcomes need to be considered in terms of whether this practice supports or restricts good patient outcomes.

- *The long term impact on nurses who have participated in disaster response* - Evidence presented in Chapter Four in the moment of

Reflection suggests that some nurses are experiencing PTSD type symptoms following participation in disaster response. This is also evident in the existing literature. Further research needs to explore the long term impact of participation in disaster response, ways to support emergency nurses post exposure and ways to bolster psychological resilience prior to exposure to disaster response.

- *What constitutes a disaster for the ED* – there is evidence through this research that existing disaster definitions which describe a whole of community impact do not always correlate with the definition of disaster in the ED context. Further research needs to be conducted to better understand what constitutes a disaster and how the ED changes from its normal every day functioning state to one of disaster response. Research in this area also needs to consider ways to protect emergency nurses when the ED becomes overwhelmed.

Limitations

The experience of working as a nurse in the ED during a disaster response is intended to be generalizable across different emergency nursing populations, which is why participants were sought from different regions who had been involved in different disaster events. Phenomenology in a broad sense is a way of uncovering phenomena as it manifests itself to the consciousness of the experiencer (Moran 2000, p. 4). This means that this thesis captures the phenomena of working as a nurse in the ED during a disaster response as it was experienced by those who participated in the research and in the context of their individual life worlds. Because this study only provides access to how the phenomena is experienced conclusions about education, resources, policy and plans for example may reflect an actual deficit or an opportunity or a lack of knowledge, experience or understanding among participants. This highlights the need to provide clearer guidance, better

education or more effective policy and thus provides a solid platform for future research to further explore the concepts that emerged from this thesis.

Summary and final conclusion

The findings of this research highlight new knowledge that has received little previous attention in the literature. Demonstrating that disaster response is different and creates a new set of challenges beyond the everyday experience of working in the ED include an altered ED setting and other changes, examples of nurses working beyond their usual scope of practice and the long term impact of participating in disaster response. These findings bring recognition to the fact that what constitutes a disaster for the nurses working in the ED deviates from traditional disaster definitions. The experience as it is depicted in this thesis is one that is all encompassing commanding complete focus. A disaster response alters the lived world of nursing in the ED in that the familiar space that nurses are working in alters and the time critical nature of the event and a need to help others comes into conscious awareness. This causes nurses to push aside other constructs of their lived world such as self and time until after the experience. Upon reflection by nurses the experience is viewed as life altering associated with positive feelings of pride and achievement as well as negative feelings and reactions that reveal the traumatic nature of the experience.

This research has highlighted four broad areas for further consideration in moving forward: the need for culture shift in the thinking of emergency nurses around the likelihood of disaster response, the importance of reflection and the need for breaks; the need for appropriate disaster training which is focussed on relevancy, awareness raising, the unique aspects of the local response and a multidisciplinary approach; policy development and future research directions. This research is the first of its kind to explore the lived experience of nurses working in the ED during a disaster response, across different countries and different disaster types. As such, it enhances what we have already come to know about this phenomenon, but also provides a foundation for future exploration.

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APPENDIX 1
SUMMARY OF ARTICLES

Author	Year	Country	Disaster type	Methodology/ Participants	Main theme	Sub theme
Alzharani & Kryatsis	2016	Saudi Arabia	Mass gathering	Cross sectional survey design – survey tool, 106 emergency nurses, multiple ED	Perceptions of disaster response	preparedness for and knowledge of disaster response
Amundson & Burkle	1995	USA	Terror attack – Oklahoma City bombing 1995	Narrative	ED response to disaster	Response
Arbon *et al.*	2013a	Australia	Healthcare disaster	Exploratory descriptive design – focus groups and survey tool, 451 emergency nurses, multiple ED	Perceptions of disaster response	Motivation to respond
Arbon *et al.*	2013b	Australia	Healthcare disaster	Exploratory descriptive design – focus groups and survey tool, 451 emergency nurses, multiple ED	Perceptions of disaster response	Motivation to respond
Battles	2007	USA	Hurricane Katrina - 2005	Exploratory descriptive design –survey tool, 5 emergency nurses, 1 ED	Perceptions of disaster response	Impact of disaster response
Behney *et al.*	2006	USA	Bus crash	Narrative	ED response to disaster	Response
Bell *et al.*	2014	USA	Avian influenza	descriptive, nonexperimental, cross-sectional design - survey tool, 332 nurses, multiple ED	Perceptions of disaster response	Motivation to respond
Collins	2001	Northern Ireland	Terror attack – Omagh bombing 1998	Narrative	Emergency nursing experience of disaster response	Response psychological implications
Considine & Mitchell	2008	Australia	CBR incidents	Exploratory descriptive design – survey tool, 64 emergency nurses, 1 ED	Perceptions of disaster response	preparedness for and knowledge of disaster response

Author	Year	Country	Disaster type	Methodology/ Participants	Main theme	Sub theme
Duong	2009	Australia	Healthcare disaster	Exploratory descriptive design – survey tool, 50 emergency nurses, 3 ED	Perceptions of disaster response	emergency nurses' perceptions of disaster education and training
Farquharson & Baguley	2003	Canada	Severe Acute Respiratory Syndrome pandemic 2003	Narrative	ED response to disaster	Response
Frank	2001	USA	Terror attack – World Trade Centre 2001	Narrative	Emergency nursing experience of disaster response	Response
French *et al.*	2002	USA	Hurricane Floyd 1999	Exploratory descriptive design – focus groups, 30 emergency nurses, 4 ED	Perceptions of disaster response	Preparedness for and knowledge of disaster response
Hammad *et al.*	2010	Australia	Healthcare disaster	Exploratory descriptive design – survey tool, 194 emergency nurses, multiple ED	Perceptions of disaster response	emergency nurses' perceptions of disaster education and training
Hammad *et al.*	2012	Australia	Healthcare disaster	Literature review	Perceptions of disaster response	experience
Koehler *et al.*	2014	USA	Terror attack – Aurora shootings 2012	Narrative	ED response to disaster	Response
Lenehan & Hughes	2014	USA	Terror attack – Boston marathon bombing 2013	Narrative	emergency nursing experience of disaster response	Response
Linkous & Carter	2009	USA	Terror attack – Virginia Tech shootings 2007	Narrative	ED response to disaster	Response
Little *et al.*	2012	Australia	Burns disasters 2002 & 2009	Comparative case study	ED response to disaster	Response

Author	Year	Country	Disaster type	Methodology/ Participants	Main theme	Sub theme
Mickelson *et al.*	1999	USA	Train crash	Narrative	ED response to disaster	Response
Mitchell *et al.*	2011	Northern Ireland	CBRNE incidents	Exploratory descriptive design – survey tool, 152 emergency nurses, multiple ED	Perceptions of disaster response	preparedness for and knowledge of disaster response
O'Connor & Hammad	2016	Australia	Terror attacks	Literature review	Perceptions of disaster response	experience
Ranse *et al.*	2013	Australia	Healthcare disaster	Retrospective exploratory descriptive design – survey tool, 10 emergency nurse course facilitators	Perceptions of disaster response	emergency nurses' perceptions of disaster education and training
Richardson *et al.*	2013	New Zealand	Canterbury earthquakes 2010 - 2011	Narrative	emergency nursing experience of disaster response	Response
Seyedin *et al.*	2015	Iran	Healthcare disaster	Exploratory descriptive design – survey tool, 460 emergency nurses, multiple ED	Perceptions of disaster response	preparedness for and knowledge of disaster response
Taylor *et al.*	2003	Australia	Terror attack – Bali bombing 2002	Narrative	ED response to disaster	Response
Tham	2004	Singapore	Severe Acute Respiratory Syndrome pandemic 2003	Narrative	ED response to disaster	Response
Timm & Reeves	2007	USA	Accidental chemical exposure - N-butyl mercaptan	Narrative	ED response to disaster	Response

Author	Year	Country	Disaster type	Methodology/ Participants	Main theme	Sub theme
Tracy	2008	USA	Accidental chemical exposure - chlorine	Narrative	ED response to disaster	Response
Wachira *et al.*	2014	Kenya	Terror attack – Westgate mall shooting 2013	Narrative	ED response to disaster	Response
Whetzel *et al.*	2011	USA	Healthcare disaster	Exploratory descriptive design – survey tool, 177 emergency nurses, multiple ED	Perceptions of disaster response	preparedness for and knowledge of disaster response
Yip	2002	USA	Terror attack – World Trade Centre 2001	Narrative	Emergency nursing experience of disaster response	Response

Dear Karen,

The Chair of the Social and Behavioural Research Ethics Committee (SBREC) at Flinders University considered your response to conditional approval out of session and your project has now been granted final ethics approval. Your ethics final approval notice can be found below.

FINAL APPROVAL NOTICE

Project No.:	**5701**
Project Title:	Disaster nursing: a study of the lived experience of nurses who have worked in the emergency department (ED) during disaster
Principal Researcher:	Mrs Karen Hammad
Email:	karen.hammad@flinders.edu.au
Address:	School of Nursing and Midwifery

Approval Date:	3 August 2012	Ethics Approval Expiry Date:	**30 May 2016**

The above proposed project has been **approved** on the basis of the information contained in the application, its attachments and the information subsequently provided with the addition of the following comment:

Additional information required:

1. Please ensure that a copy of the correspondence granting permission to conduct the research from Presidents (or appropriate delegate) from all organisations to be involved in the research are submitted to the Committee *on receipt* (Conditional approval response – number 3).

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

1. **Participant Documentation**
   Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:
   - all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.
   - the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and

questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialling codes for all telephone and fax numbers listed for all research to be conducted overseas.

- the SBREC contact details, listed below, are included in the footer of all letters of introduction and information sheets.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 'INSERT PROJECT No. here following approval'). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au.

2. Annual Progress / Final Reports

In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research (March 2007)* an annual progress report must be submitted each year on the **3 August** (approval anniversary date) for the duration of the ethics approval using the annual progress / final report pro forma. *Please retain this notice for reference when completing annual progress or final reports.*

If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please submit either (1) a final report; or (2) an extension of time request and an annual report.

Your first report is due on **3 August 2013** or on completion of the project, whichever is the earliest.

3. Modifications to Project

Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such matters include:

- proposed changes to the research protocol;
- proposed changes to participant recruitment methods;
- amendments to participant documentation and/or research tools;
- extension of ethics approval expiry date; and
- changes to the research team (addition, removals, supervisor changes).

To notify the Committee of any proposed modifications to the project please submit a Modification Request Form to the Executive Officer. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

Change of Contact Details

Please ensure that you notify the Committee if either your mailing or email address changes to ensure that correspondence relating to this project can be sent to you. A modification request is not required to change your contact details.

4. Adverse Events and/or Complaints

Researchers should advise the Executive Officer of the Ethics Committee on 08 8201-3116 or human.researchethics@flinders.edu.au immediately if:

- any complaints regarding the research are received;
- a serious or unexpected adverse event occurs that effects participants;

- an unforseen event occurs that may affect the ethical acceptability of the project.

Andrea Fiegert (nee Mather)
Executive Officer
Social and Behavioural Research Ethics Committee

c.c Adjunct Prof Kristine Gebbie
Dr Alison Hutton

Andrea Fiegert (nee Mather)
Executive Officer, Social and Behavioural Research Ethics Committee
Research Services Office | Union Building Basement
Flinders University
Sturt Road, Bedford Park | South Australia | 5042
GPO Box 2100 | Adelaide SA 5001
P: +61 8 8201-3116 | F: +61 8 8201-2035 | Web: Social and Behavioural Research Ethics Committee

Flinders
UNIVERSITY

CONSENT FORM FOR PARTICIPATION IN RESEARCH
(by interview)

Emergency Nurses and Disasters

I .....

being over the age of 18 years hereby consent to participate as requested in the letter of introduction and information sheet for the research project on **Emergency Nurses and Disasters**

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio recording of my information and participation.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:

   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - I may ask that the recording/observation be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.

36. I agree/do not agree* to the tape/transcript* being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed. ** delete as appropriate*

7. If I become distressed or experience any ill effects from this study I will seek support from my General Medical Practitioner.

Participant's signature……Date……..

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name…….....

Researcher's signature……..Date…….

NB: Two signed copies should be obtained. The copy retained by the researcher may then be used for authorisation of Items 8 and 9, as appropriate.

APPENDIX 4
LETTER OF INTRODUCTION

Dear

RE: Emergency nurses and disasters study

My name is Professor Paul Arbon. I am the Dean of the School of Nursing and Midwifery and Director of the Disaster Research Centre at Flinders University. I would like to introduce Karen Hammad, who is a PhD Candidiate in the School of Nursing and Midwifery at Flinders University. Karen is the principal researcher of this study which will form part of the requirements of her PhD. Data will be published as part of a thesis and journal articles.

The study *Emergency nurses and disaster response* aims to explore the experiences and perceptions of nurses who have worked in the emergency department (ED) during a response to an external disaster event. The study forms part requirement of a PhD program. Data collected from the study will lead to a thesis as well as publications in relevant nursing journals.

You are invited to participate in the study. You will be asked to participate in an initial interview lasting approximately 60 minutes. The interview will explore your experiences of working in the ED during a response to an external disaster event. At the conclusion of the interview the researcher will organise a time for a second interview to be conducted approximately a week later.

Approximately a week after the initial interview you will participate in a second interview lasting approximately 60 minutes. This interview will further explore your experiences of your involvement as well as your perceptions of the concept of disaster.

Interviews will be conducted via Skype. To participate you will require access to a computer (including microphne and speakers) and Skype. An audio recording of the interviews will be used to aid with transcribing data, for the purposes of analysis.

Participation in the study is voluntary. You can stop the interview or cease involvement in the study at any time without consequences.

Involvement in this study is anonymous. To maintain anonymity you will be provided with a psuedonym in all written data and publications that arise from the study. All data will be stored in de identified form.

If you have any enquiries or would like to participate in this study please contact (insert new email address for purpose of study).

Yours Sincerely,

Professor Paul Arbon
Dean of School of Nursing and Midwifery

Flinders University

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 5701). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au.

Title: 'Emergency nurses and disasters'

Investigators:

Mrs Karen Hammad
School of Nursing and Midwifery
Flinders University
Ph: +61 8 82017686

Supervisors:
Professor Paul Arbon
Dean of School of Nursing and Midwifery, Flinders University

Adjunct Professor Kristine Gebbie
School of Nursing and Midwifery, Flinders University

Doctor Alison Hutton
School of Nursing and Midwifery, Flinders University

Description of the study:
This study is part of the project entitled '*Emergency nurses and disasters'.* This project will investigate the experiences of nurses who have worked in the emergency department (ED) during a response to an external disaster event. This project is supported by Flinders University School of Nursing and Midwifery.

Purpose of the study:
This project aims to explore the experiences and perceptions of nurses who have worked in the ED during a response to an external disaster event.

What will I be asked to do?
Questions about your gender, the number of years you have worked as a nurse, the number of years you have worked in the emergency department and if you have any relevant post graduate qualifications accompanies this letter. You will need to return this via email with the consent form if you would like to participate in the study.
You will be asked to participate in an initial interview lasting approximately 60 minutes. The interview will explore your experiences of working in the ED in a second interview lasting approximately 60

minutes. This interview will further explore your experiences of your involvement as well as your perceptions of the concept of disaster. Interviews will be conducted via Skype. To participate you will require access to a computer (including microphone and speakers) and Skype. An audio recording of the interviews will be used to aid with transcribing data, for the purposes of analysis.

What benefit will I gain from being involved in this study?
The sharing of your experiences and perceptions may help to inform policy and practice for nurses responding to future disasters.

Will I be identifiable by being involved in this study?
We do not need your name and you will be anonymous. Once the interview has been typed-up and saved as a file, the voice file will then be destroyed. Any identifying information will be removed and the typed-up file stored on a password protected computer that only the coordinator (Mrs Karen Hammad) will have access to. Your comments will not be linked directly to you and you will be given a pseudonym in any write up of the data.

Are there any risks or discomforts if I am involved?
There is a possibility that talking and reflecting about a traumatic time such as your involvement in a disaster may bring back uncomfortable or emotional memories. If this happens you are advised to seek support from your General Medical Practitioner. You also may stop the interview at any time without effect or consequences.

How do I participate?
To participate in this study you need to meet the following criteria:

- have experience working in an ED including during a response to an external disaster event
- the disaster event needs to be no more than 5 years ago
- be proficient in spoken and written English language
- have access to a Skype enabled computer including microphone and speakers.

Participation is voluntary. You may answer ‘no comment’ or refuse to answer any questions and you are free to withdraw from the interview at any time without effect or consequences.

A consent form accompanies this email. If you would like to participate, please complete the consent form and return via return email or post to the address in the top right corner. Once the principal researcher receives this consent they will contact you to organise a time for the first interview.

How will I receive feedback?

Data from the project will form part of a thesis and will be published in journals. You may request a copy of the transcript of your interviews for your own interest.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (5701). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Nurses working in the emergency department (casualty, emergency room, accident and emergency) play an important role in the healthcare response to disaster, yet very little is known about their experiences. I am conducting a study about emergency nurses and disaster response and would like to interview nurses who have worked in the emergency department during a disaster about their experiences and understanding of disaster response. Participants will be asked to be involved in two interviews via Skype, which will last for approximately 1 hour each.

To be eligible for involvement in this study you need to meet the following criteria:

- worked as a nurse in an emergency department during a disaster response within the last 5 years
- worked as a nurse in the emergency department for 12 months or more
- fluent in spoken English
- have access to a computer with Skype access, microphone, camera and speakers.

If you would like to know more about this study or you would like to participate please don't hesitate to contact me via email at disaster.study@hotmail.com

APPENDIX 7
DEMOGRAPHC SURVEY

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1. What is your gender?

2. How many years have you been a Registered Nurse?

3. How many years have you worked as a Registered Nurse in an emergency department?

Interview 1 schedule:

Will be guided by the question; “Can you tell me about your experience of working in the emergency department during a disaster”.

Interview 2 schedule:

Participants will be asked if they have anything further to add regarding their experience in disaster response or if they have any reflections to comment on following the first interview.

If I have anything from the first interview that I need to clarify I will do so.

Participants will be asked the question: “Can you tell me what a disaster is for you as a nurse working in the emergency department?”

Topics that will be explored in each of the interviews may include:

- Nursing actions
- Feelings/emotions
- Collegiality
- Nursing behaviour
- Changes in the emergency department
- Preparedness