

University of Massachusetts, Worcester

Emergency Nurses' Experiences with Critical Incidents

A dissertation submitted in fulfillment of the requirements
for the degree of

Doctor of Philosophy

by

Cynthia Francis Bechtel

Worcester, Massachusetts

May, 2009

APPROVALS

“Emergency Nurses’ Experiences with Critical Incidents”

A Dissertation Presented

By

Cynthia Francis Bechtel

Approved as to style and content by:

Jean Boucher

Carol Bova

Abraham Ndiwane

Date 5/28/09

Paulette Seymour-Route, PhD, RN
Dean/Professor
University of Massachusetts Worcester
Graduate School of Nursing

Dedication

This dissertation is dedicated to the emergency nurses who were willing to share their tears and the stories of their critical incident experiences. I am honored to be trusted with their experiences.

Acknowledgements

A dissertation cannot be completed without the support of many. A special thank you to my dissertation chair, Dr. Jean Boucher, for her encouragement, patience, and assistance with this study. Also, my gratitude to my other committee members, Dr. Carol Bova and Dr. Abraham Ndiwane.

I am grateful to Dr. Lisa Ogawa for her friendship during this journey. Dr. Ruth Remington has not wavered in her encouragement and support through my master's thesis, enrollment into the PhD program, and completion of this dissertation.

Thank you also to the Pi Epsilon At Large and Iota Phi At Large chapters of Sigma Theta Tau for their support of this study.

Table of Contents

Dedication.....	iii
Acknowledgements.....	iv
Abstract.....	xi
Chapter I.....	1
Introduction.....	1
Emergency Nurses and Stressors	3
Emergency Department Challenges.....	3
Workplace Stressors.....	5
Interpersonal Stressors	8
Critical Incidents.....	9
Appraisal of Critical Incidents	13
How to Reduce the Effect of Critical Incidents	16
Critical Incident Stress.....	19
Signs and Symptoms.....	21
Summary	23
Chapter II.....	25
Theoretical Framework.....	25
Use of the Lazarus and Folkman Theory	26
Stress	27
Appraisal.....	28
Coping.....	28

The Lazarus and Folkman Theory Utilized in Nursing Research.....	29
Assumptions Derived from the Lazarus and Folkman Theory	30
Summary	31
Chapter III.....	32
Methods.....	32
Qualitative Descriptive Approach and Rationale	32
Naturalistic Paradigm.....	33
Theoretical Framework of the Proposed Study	33
Setting	33
Sample.....	34
Inclusion Criteria	35
Exclusion Criteria	35
Procedures.....	35
Recruitment of Emergency Department Nurses	35
Data Collection	36
Data Management	38
Data Analysis	39
Trustworthiness.....	40
Reflexivity.....	41
Protection of Human Subjects	41
Risks.....	42
Summary	42
Chapter IV.....	44

Results.....	44
Participants.....	44
Themes and Subthemes.....	47
Critical Incident Experiences.....	48
Aftermath.....	63
Summary.....	72
Chapter V.....	74
Discussion.....	74
Critical Incident Experiences.....	74
Connections.....	77
Workplace Culture.....	77
Aftermath.....	80
Lasting Effects.....	80
Strategies.....	81
Theoretical Framework.....	82
Study Limitations.....	83
Implications for Practice.....	84
Implications for Policy.....	84
Implications for Research.....	84
Summary.....	85
References.....	87
Appendices.....	98
Appendix A. Interview Guide.....	99

Appendix B. Demographic Survey	100
--------------------------------------	-----

LIST OF TABLES

Table 1. Critical Incidents Identified by Emergency Nurses	11
Table 2. Signs and Symptoms of Critical Incident Stress.....	21
Table 3. Study Participant Demographics	45

LIST OF FIGURES

Figure 1. Theoretical Framework	26
Figure 2. Themes and Subthemes	47

Abstract

This qualitative descriptive research study was undertaken to describe the experiences of emergency nurses with critical incidents and identify strategies used to manage these situations in the emergency department setting. Critical incidents are events, such as death or serious injury, that cause a strong emotional reaction and may overwhelm a nurse's usual coping skills. Nineteen nurses who worked in one of two community-based emergency departments in Central Massachusetts were interviewed and asked to describe a critical incident they had experienced in their nursing career. Qualitative content analysis revealed two major themes: (1) critical incident experiences; and (2) aftermath; and five subthemes: (a) connections; (b) workplace culture; (c) responses; (d) lasting effects; and (e) strategies.

Critical incidents were limited to events with children, patient deaths, and interactions with family; this differed from prior research in that no incidents were identified involving multiple casualties, violence, or mutilating injuries. Connections occurred when the patient was known to the nurse or reminded the nurse of self or family. Responses were the reactions of the participants to the critical incident and were physical, psychological, and spiritual in nature. The majority of study participants cried in response to a critical incident. Workplace culture, a subtheme not found in other studies, involved their perceptions of expected behavior in the emergency department and emphasized the influence of workplace culture on newer or inexperienced nurses.

The theme of aftermath described the time period following critical incident. Lasting effects occurred in the form of vivid memories that were triggered by different stimuli. The subtheme, strategies, revealed that nurses desired, but lacked formal

strategies to manage their reactions following a critical incident. Thus, they described the use of informal strategies such as talking to co-workers and family members.

Implications of this study support the need for educational preparation and support of emergency nurses who deal with critical incidents in the workplace.

Intervening during the critical incident experience and having follow-up strategies in place to prevent distress and enhance coping in the aftermath are important for well-being, practice, and patient care in the emergency setting.

Chapter I

Introduction

Nearly 114 million patients visited emergency departments in the United States (US) in 2005 and more than half were categorized as either emergent (12.9%) or urgent (37.8%) (McCaig & Nawar, 2006). In addition, 40% of hospital admissions occurred through emergency departments (Schrivier, Talmadge, Chuong, & Hedges, 2003). Furthermore, the emergency department has been the frontline for disaster response including natural disasters, multiple casualty incidents and terrorism (Schrivier et al., 2003).

Healthcare providers in the US lead the list of professionals who were identified as being most prone to workplace stress (Lambert, Lambert, & Yamase, 2003). In the US there are approximately 100,000 nurses employed in emergency department settings (Emergency Nurses Association, personal correspondence, 2006). A descriptive study of 225 nurses found emergency nurses reported moderate to high levels of work stress in their environments (44.4%, no *n* reported) with three times more emergency nurses considering leaving nursing compared to nurses in other departments (Rea, 2005). Stress-related disorders in emergency nurses adversely affected patient outcomes through poor patient care, medication, and treatment errors (Caine & Ter-Bagdasarian, 2003). Lowered productivity, absenteeism, and disability associated with stress reactions were responsible for costs in excess of \$150 billion (Caine & Ter-Bagdasarian, 2003). Nurses working in the emergency department are exposed to stressful events regularly and thus, at risk for these outcomes.

The stressors experienced by emergency nurses included workplace, interpersonal, and critical incident stressors. Emergency nurses experienced a variety of critical incidents. In a survey of 682 emergency nurses 79.8% ($n = 544$) experienced the death of a child, 90.4% ($n = 616$) experienced the death of a patient after prolonged resuscitation, 88.5% ($n = 603$) dealt with hysterical family members, 70.7 % ($n = 482$) experienced multiple casualties at the same time, and 58.6% ($n = 400$) experienced caring for multiple trauma patients with massive bleeding or dismemberment within a one year period (Burns & Harm, 1993). Exploratory research by O'Connor and Jeavons (2003) involving nurses ($N = 227$) in an Australian major medical center found that 58% had experienced a critical incident in the past year. In a study by Laposa and Alden (2003) all emergency nurses ($N = 51$) had experienced at least one critical incident, 20% ($n = 10$) experienced significant symptoms of stress, and 12% ($n = 6$) of the nurses had symptoms of post traumatic stress disorder (PTSD).

Critical incidents have lead to significant critical incident stress (CIS) for emergency nurses (Burns & Harm, 1993; Burns & Rosenberg, 2001; Helps, 1997). In a study of 51 emergency nurses, 20% ($n = 10$) considered leaving the emergency department following exposure to a critical incident (Laposa, Alden, & Fullerton, 2003). Exposure to critical incidents cannot be eliminated; therefore critical incident research is needed. To date, there has been a lack of research that specifically described critical incidents experienced by emergency nurses in the US. Current research findings have focused on emergency workers such as EMTs, paramedics, and firefighters. As a result, emergency nurses' experiences with critical incidents, including the events and strategies used, has not been fully understood. Better understanding could lead to the development

of interventions that reduce critical incident stress, while enhancing the well-being of emergency nurses. Therefore, the purpose of this study was to describe the experience of emergency nurses with critical incidents including identifying strategies that emergency nurses use to manage these situations in the emergency department setting. The specific aims of the study were to:

1. Describe emergency nurses' experiences with critical incidents.
2. Examine strategies identified by emergency nurses to manage critical incidents in the emergency department.

Emergency Nurses and Stressors

Emergency nurses have experienced many stressors in the demanding emergency department environment including workplace, interpersonal, and critical incident stressors (Adeb-Saeedi, 2002; Burns & Harm, 1993; Burns & Rosenberg, 2001; Burns, Kirilloff, & Close, 1983; Hawley, 1992; Helps, 1997; Laposa et al., 2003). The stress experienced by emergency nurses does not always result in distress. Stress can also be good stress or eustress (Selye, 1984). Many nurses have chosen the fast-paced environment of the emergency department and have thrived on the challenges of emergency nursing (Cronin & Cronin, 2006; Eager, 2003).

Emergency Department Challenges

In a qualitative study of 25 emergency department nurses, Cronin and Cronin (2006) found that nurses were attracted to the emergency department for a variety of reasons including the diversity and variety of experiences. A descriptive study of emergency nurses ($N = 173$) showed similar findings with variety and excitement the number one reason (39.3%, $n = 68$) for choosing to work in the emergency department

(Eager, 2003). In the course of their work, a nurse may have cared for patients in any age category from newborn to the very old. In fact, it has been shown that 20.8% of emergency department patients were under 15 years of age, 64.9 % of patients were between 15 and 64, while the remaining 14.3% of patients were over 65 years of age (McCaig & Nawar, 2006).

Nurses may also have chosen the emergency department for the opportunity to use both intellectual and physical skills while caring for patients (Burns et al., 1983; Cronin & Cronin, 2006; Eager, 2003). The environment is intellectually challenging because emergency nurses see patients from all specialties (Eager, 2003). The variety of emergencies provides nurses with opportunities and professional incentives to enhance their nursing careers (Cronin & Cronin, 2006). Patients presenting with general symptoms of pain and fever accounted for 15% of emergency department visits, while patients with musculoskeletal symptoms (13.8%), digestive symptoms (13.7%), and respiratory symptoms (10.7%) were also common (McCaig & Nawar, 2006). In addition, injury, poisoning, and adverse effects of medical treatment accounted for 37.3% of emergency department visits (McCaig & Nawar, 2006). The emergency department also provides opportunities to use skills in rapid assessment, intravenous insertion, assisting with intubations or conscious sedation, and functioning in emergency situations (Burns et al., 1983).

The opportunity to become a member of the emergency department team has been an incentive to work in this environment (Burns et al., 1983; Cronin & Cronin, 2006; Eager, 2003). Eager's descriptive study of 173 emergency nurses found teamwork listed as the second reason nurses chose to work in the emergency department.

Emergency nurses have also chosen this environment for the opportunity to help patients. Burns et al. (1983), in a descriptive study of emergency nurses, found patient improvement was listed as the highest source of satisfaction in 32% of nurses ($n = 33$), while Helps (1997) found that 20% of nurses ($n = 10$) reported their greatest source of satisfaction was to save lives and help patients get better. Emergency nurses have thrived on the challenges of the emergency department in terms of the variety, intellectual stimulation, excitement, and teamwork (Cronin & Cronin, 2006), but they are also affected by the workplace, interpersonal, and critical incident stressors found in the emergency department.

Workplace Stressors

Several studies examining stressors among emergency nurses have identified inadequate staffing, verbal and physical abuse, family presence, and discharge delay as significant workplace stressors.

Inadequate Staffing. Inadequate staffing was identified by five studies examining stressors among emergency nurses (Adeb-Saeedi, 2002; Burns et al., 1983; Eager, 2003; Hawley, 1992; Helps, 1997). Burns et al. found that 39% of emergency nurses ($n = 62$) identified inadequate staffing as their greatest source of stress. A study of 120 nurses found that 31% ($n = 37$) identified heavy workload associated with inadequate staffing as a source of stress (Adeb-Saeedi, 2002). Both Hawley's (1992) ($n = 29$) and Helps' (1997) ($n = 51$) studies of emergency nurses found staffing practices, including shortage of staff, to be the number one source of stress. Predicting adequate staffing levels for the emergency department has been difficult for a number of reasons. Patient use of emergency departments has continued to grow because of an increase in the elderly

population, uninsured patients, convenient hours of operation, and referrals from primary care providers who do not have time to see acutely ill patients (Schrivier et al., 2003). In the emergency department it has also been difficult to predict when the patient load will increase or decrease due to unexpected events (e.g. mass casualty incidents, food borne illnesses, or weather related-emergencies) making staffing predictions complex.

Therefore, emergency nurses face the uncertainty of going from a quiet environment to a packed waiting room and ambulances lined up at the door at any time of the day or night. Fifteen percent of patients arrived at the emergency department via ambulance (McCaig & Nawar, 2006).

Additional stressors related to staffing in the workplace involved the types of emergent versus non-emergency situations and the use of services by patients that are unique to the emergency department. Several researchers found a source of stress for emergency nurses was patient use or misuse of the emergency department (Hawley, 1992; Schrivier et al., 2003). While more than half of emergency patients were emergent or urgent, 21.8% of patients were semi-urgent and may have waited up to an hour for treatment, and 12.5% were non-urgent, allowing two hours before treatment (McCaig & Nawar, 2006). Emergency nurses may consider certain presenting conditions as non-emergent, while the patient considered it to be an emergency (Hawley, 1992). Emergency nurses identified patients seen repeatedly in the emergency department for common medical conditions as a source of stress (Hawley, 1992).

Verbal and Physical Abuse. As identified in five studies, emergency nurses were continually exposed to verbal and physical abuse within their role in the emergency department (Adeb-Saeedi, 2002; Cox, 2004; Crabbe, Bowley, Boffard, Alexander, &

Klein, 2004; Eager, 2003; Helps, 1997) and were especially vulnerable to violence from patients and their families (National Institute for Occupational Safety and Health, 2002). Crabbe and colleagues (2004) found that among 38 nurses and doctors over a two-year period, 92% ($n = 34$) experienced verbal abuse and 76% ($n = 29$) were threatened with assault. In another study, 82% ($n = 45$) of emergency nurses had been assaulted during their careers (Erickson & Williams-Evans, 2000).

Violence against healthcare workers is greater than in other industries. For example, healthcare injuries occurred at a rate of 8.3 assaults/10,000 workers compared to 2/10,000 for industry workers (National Institute for Occupational Safety and Health, 2002). Due to the prevalence of this type of abuse against healthcare workers in the emergency department, many nurses accepted such violence-related injuries as part of everyday workplace stress rather than as a critical incident (Emergency Nurses Association, 2006).

Family Presence. Family presence in the emergency department has been viewed as a source of satisfaction and help when family comfort and support was provided to the patient (Adeb-Saeedi, 2002; Hawley, 1992; Helps, 1997). It can also become an added burden when family presence adds to workplace stress for the emergency nurse. A descriptive study of emergency nurses ($N = 120$) listed family presence as the second leading cause of workplace stress (37.7%, $n = 45$) (Adeb-Saeedi, 2002). Beavan and Stephens (1999), in an exploratory study involving nine female emergency nurses found that, at times, the emergency nurse was caring for the family, in addition to the patient, and may have difficulty seeing the evolving additional distress.

Discharge Delay. Difficulty discharging patients from the emergency department was identified in two studies as a stressor (Eager, 2003; Hawley, 1992). Delay in discharging patients occurred when patients were awaiting tests results or consultations. A second and more common situation has been termed “exit block” (Eager, 2003, p. 7) which is the problem of not being able to admit the patient to the hospital. Exit block may have occurred due to a lack of hospital inpatient beds resulting in an overflow of patients needing admission and causing “boarding” of patients in the emergency department (Eager, 2003; Hawley, 1992). These patients add to the workload of the emergency nurse as they care for these patients for 24 hours or longer prior to admission to the hospital (Schriver et al., 2003). In addition, patients also wait in the emergency department for significant periods of time for reasons such as shift changes of nurses on inpatient floors, staff availability to take report, and patient bed changes on the receiving unit (Hawley, 1992). Even though emergency nurses were not able to discharge their patients in these situations, new patients continued to arrive at the emergency department, thereby increasing the nurse’s workload.

Interpersonal Stressors

Emergency nurses identified interpersonal relationships as a source of workplace stress when the interpersonal relationships became detrimental or negative to providing emergency care (Beavan & Stephens, 1999; Burns et al., 1983; Helps, 1997; Laposa et al., 2003). A study of 51 emergency nurses found that relationships with colleagues were listed as one of the top sources of stress in the emergency department (Helps, 1997). These relationships occurred between nurses (Helps, 1997) or nurses and physicians (Burns et al., 1983). Hawley (1992) found that 14.6 % ($n = 28$) of emergency nurses

identified relationships with both physicians and other nurses as important sources of stress, while Healy and McKay (1999) found that 38% of hospital nurses ($n = 49$) reported conflict with other nurses as the most significant workplace stressor. Poor interpersonal relationships have hampered effective communication and contribute to critical incident stress (Laposa et al., 2003).

Issues with management or supervisors have been identified as stressors for emergency nurses (Beavan & Stephens, 1999; Burns et al., 1983; Hawley, 1992; Helps, 1997). Complaints about supervisors include their inexperience, perceived lack of support of the nurses, lack of communication between supervisors and nurses, and an inability of supervisors to change the workplace environment (Hawley, 1992; Laposa et al., 2003). Laposa et al. (2003) found that 67% of emergency nurses ($n = 34$) did not feel supported by administration in the workplace.

Critical Incidents

The third type of stressor for emergency nurses was the event which may be termed a critical incident.

What Are Critical Incidents? One of the earliest definitions of critical incidents appearing in the literature included “any situation faced by emergency service personnel that causes them to experience unusually strong emotional reactions which have the potential to interfere with their ability to function either at the scene or later” (Mitchell, 1983, p. 36). Pioneering research on critical incidents among emergency medical service (EMS) personnel, fire, and police departments suggested that experiencing a critical incident may be linked to the development of critical incident stress (Mitchell, 1984).

Findings from that study may be pertinent to emergency nurses due to their exposure to similar critical incidents in the care of patients (Appleton, 1994; Laws & Hawkins, 1995).

Research on critical incidents with nurses was first conducted by Appleton (1994). A descriptive study of general duty nurses ($N = 50$) from British Columbia grouped critical incident experiences into six categories: moral distress, lack of responsiveness by a health care professional, violence toward a nurse, emergency situations, patient death, and actual or potential contact with infectious body fluids (Appleton, 1994). A moral distress event resulted when interference from family or coworkers prevented emergency nurses from fulfilling their duties, potentially leading to a critical incident for emergency nurses. When a lack of responsiveness by a healthcare professional, such as a physician, occurred that affected patient care, it could create a critical incident for nurses. Emergency situations that involved cardiac or respiratory arrests could precipitate critical incident stress. Lastly, exposure to potentially infectious materials created a critical incident stress situation for the nurses because of fear of developing disease (Appleton, 1994).

A descriptive study by Laws (2001) of critical care nurses ($N = 31$) in South Australia described the critical incident stress experienced after cardiopulmonary resuscitation (CPR). CPR was found to be a critical incident for many of these nurses. Reactions to this incident interfered with nurses' abilities to competently perform duties either during the CPR or later. Many nurses also complained of fatigue or intrusive thoughts when measured by the Impact of Events Scale, an instrument that measures subjective stress related to avoidance and intrusion in post-traumatic phenomena (Laws, 2001). Exploratory research by O'Connor and Jeavons (2003) involving nurses ($N = 227$)

in an Australian major medical center categorized critical incidents as grief, risk, and emergency.

Critical incidents have been defined as events that potentially overwhelm a nurse's usual coping skills (Mitchell & Everly, 2001) and produce unusual distress in a healthy person (American Psychiatric Association, 2000). Critical incidents identified most frequently by nurses include: the death of a child, injury, or abuse of a child. These and other critical incidents commonly identified by emergency nurses have been presented in Table 1.

Table 1. Critical Incidents Identified by Emergency Nurses

Country	N	Researcher(s)	Design	Critical incidents
US	682	Burns & Harm (1993)	Descriptive	Death of child Death of coworker Suicide of coworker Providing care to someone known Disaster Injury and abuse to a child Multiple casualties Caring for trauma patients Hysterical family members Death of patient after prolonged resuscitation
Australia	362	Lam, Ross, Cass, Quine, & Lazarus (1999)	Descriptive	Death and dying in a child Seriously injured child Handling aggressive patients/family Death and dying in an adult Seriously injured adult Handling dead body or body parts
Iran	120	Adeb-Saeedi (2002)	Descriptive	Dealing with patient pain and suffering Death and dying
Australia	192	O'Connor & Jeavons (2003)	Descriptive	Incidents with children Suicide of a coworker Contact with infectious body fluids Death of coworker

				Caring for dying/injured friend/relative Multiple events/traumas Violence Disaster Cardiac and respiratory arrest
Canada	51	Laposa, Alden, & Fullerton (2003)	Descriptive	Caring for dying/injured friend/relative Violence Multiple trauma Death of child Caring for someone who resembles you or are a family member Caring for a burn patient
South Africa	20	Crabbe, Bowley, Boffard, Alexander & Klein (2003)	Descriptive	Injured children Rape or sexual assault Fires Facial injuries Shootings/stabbings Motor vehicle crashes Suicides

Critical Incidents Dealing with Children. Critical incidents dealing with children were difficult for nurses because of the innocence of children, the feeling that the child did not have the opportunity to live their life, and that their death was senseless (Burns & Harm, 1993; Haslam & Mallon, 2003). In addition, nurses may have children of their own who were of a similar age or sex. This association added to the stress of the critical incident (Haslam & Mallon, 2003). Nurses may have become angry at such events involving the death or injury of a child and blame the parents or the physicians (Burns & Harm, 1993). The nurses may also develop feelings of helplessness, sadness or grief when dealing with the death of a child (Appleton, 1994).

Critical Incidents Dealing with Death and Dying. The death of a patient was considered a critical incident when unusual circumstances were involved (Adeb-Saeedi,

2002; Appleton, 1994). These unusual circumstances may have been associated with knowing the patient or family, a very traumatic or gory death, or again, the death of a child.

Suicides and attempted suicides were rarely identified as critical incidents and were not found to be distressing by many of the participants. Some healthcare providers also felt that caring for suicide victims took time from patients who wanted and needed care (Beavan & Stephens, 1999; Crabbe et al., 2004). In Beavan and Stephens' (1999) exploratory study of nine emergency nurses, it was reported that suicidal patients had self-inflicted injuries which were within the patient's control, while Crabbe et al. (2004) found only 3% ($n = 2$) of 38 doctors and nurses caring for trauma victims were emotionally distressed when caring for a suicide patient.

Pain and suffering of patients, traumatic injuries, and multiple casualty incidents were all listed as frequent and disturbing critical incidents. These incidents may have left nurses feeling they lacked the ability to competently care for their assigned patients (Adeb-Saeedi, 2002). When nurses believed they were not able to deal with the patient's pain, they experienced a loss of control (Adeb-Saeedi, 2002).

Appraisal of Critical Incidents

Overall, nurses and pre-hospital emergency workers identified similar events as being critical incidents (Haslam & Mallon, 2003; Jonsson & Segesten, 2004; Oster & Doyle, 2000; Regehr, Hill, & Glancy, 2000). However, research has shown that the critical incident itself may not cause an emergency nurse or emergency worker to develop critical incident stress (Burns & Rosenberg, 2001). In addition to the identification of

specific events as critical incidents, the appraisal of these events must be considered (Burns & Rosenberg, 2001; O'Connor & Jeavons, 2003).

The appraisal of a critical incident may be influenced by the different meaning each healthcare provider places on the incident. In a qualitative pilot study of six emergency nurses, Burns and Rosenberg (2001) found that the meaning a nurse gives to a critical incident is the trigger for symptoms of critical incident stress.

According to Appleton (1994) nurses may or may not have appraised an event as a critical incident based on sensory images, the reaction of each person to the event, each person's performance during the event including feelings of control, and the meaning each person placed on the critical incident (Beavan & Stephens, 1999; Burns & Rosenberg, 2001). In addition, emergency personnel, including emergency nurses, were confronted by the suddenness and unexpectedness of emergency events with little opportunity to prepare for a critical incident (Jonsson & Segesten, 2003). Finally, many critical incidents experienced by emergency personnel will have negative outcomes resulting in severe injury and loss for the patients.

The event becomes a critical incident for the individual because of the personal meaning for the individual (Burns & Rosenberg, 2001). In addition, the healthcare provider may have felt compassion for the victim or the incident which brought up memories from the caregiver's past. This type of appraisal made the healthcare provider more vulnerable to critical incident stress (Jonsson & Segesten, 2003). The healthcare provider may have identified with the victim or the victim may have reminded them of oneself, family, or friends. It may have been difficult for the healthcare provider to see the victim in distress with pain and suffering (Beavan & Stephens, 1999; Burns & Harm,

1993). This type of response to the critical incident may also have lead to critical incident stress.

An event was more likely to be appraised as a critical incident if the healthcare provider felt inadequate to deal with the event or was unable to relieve suffering (Beavan & Stephens, 1999; Burns & Harm, 1993; Jonsson & Segesten, 2003). This may have occurred when the healthcare provider felt helpless, felt a lack of control over the event, or felt powerless (Burns & Harm, 1993; Burns & Rosenberg, 2001; Jonsson & Segesten, 2003). In addition, it could have occurred when the performance of the nurse was perceived as inadequate regarding skills or training required for the situation (Beavan & Stephens, 1999). Feelings of helplessness occurred when the incident was beyond the control of the healthcare provider because of the extent of the injuries (Burns & Rosenberg, 2001). A study of 50 nurses found that two-thirds of critical incidents occurred during the evening and night shifts when nurses may have less experience and coping skills (Appleton, 1994). In addition, two-thirds of these nurses recalled critical incidents early in their careers when they may have been inexperienced (Appleton, 1994). Emergency workers who verbalized feelings of insecurity were found to be more at risk for development of critical incident stress ($N = 164$) (Regehr et al., 2000). Conversely, emergency personnel and nurses felt more competent in their abilities when they could actively help out in an emergency situation ($N = 9$) (Beavan & Stephens, 1999).

Sensory images from critical incident events identified by healthcare providers may be described as visual, auditory, olfactory and/or tactile. Visual images were found to be especially stressful for many nurses (Burns & Rosenberg, 2001; Moszcynski & Haney, 2002). Nurses could describe the sight of an injured child (Burns & Harm, 1993).

Nurses may have remembered visual images of a foreign object imbedded in a patient or hear a mother's screaming after the death of her son (Burns & Rosenberg, 2001). Sounds of alarms and smells of vomit associated with previous resuscitations may have triggered emotions (50%, $n = 15$) (Laws, 2001).

Research findings on gender and critical incidents vary greatly. For example, Burns and Harm (1993), Laposa and Alden (2003), and Hays and colleagues (2006) found no difference between males and females in the US in their responses to critical incidents. In contrast, several studies conducted outside the US suggested that women experienced greater stress when exposed to critical incidents. Adeb-Saeedi (2002) reported more stress in Iranian females ($N = 120$, 80 females). In a study from Australia, females again perceived critical incidents as more stressful than males ($N = 192$, 165 females) (O'Connor & Jeavons, 2003). A study including 38 doctors and nurses in South Africa found females (N not identified, 42% nurses) had higher levels of stress (Crabbe et al., 2004). Most studies did not include a similar number of males, but rather, significantly more female subjects.

How to Reduce the Effect of Critical Incidents

Social Support. Social support is a way of coping with the environment as described by Lazarus and Folkman (1984). Social support, when perceived by emergency workers, allowed them to better appraise the critical incident by talking with co-workers, reviewing the critical incident, feeling supported by being part of a group, and finding solutions to prevent critical incident stress (Ootim, 2001). When nurses were dealing with critical incidents, lack of social support was negatively correlated to mental health ($n = 324$, $p = .0001$, $r = -.40$) (Chang et al., 2006).

Social support was viewed as coming from two sources: (a) peers and (b) administration or supervisors. Social support from peers was acknowledged as an effective coping mechanism because it mitigated the effects of critical incidents and prevented critical incident stress (Haslam & Mallon, 2003; Jonsson & Segesten, 2003; Laposa et al., 2003; Regehr et al., 2000; van der Ploeg & Kleber, 2003). A study of 173 emergency nurses indicated that 49% ($n = 85$) found talking with peers following critical incidents was one of the best methods of mitigating the effects of critical incident stress (Eager, 2003).

A number of research studies on emergency workers have identified complaints from emergency workers about lack of social support from administration or supervisors (Birchenall & Parrish, 2003; Laposa et al., 2003; Regehr et al., 2000; Taormina & Law, 2000). Emergency workers also suggested that a negative work environment without supervisor social support can lead to critical incident stress (Olofsson, Bengtsson, & Brink, 2003). When emergency workers received social support from supervisors, stress was significantly modified and the effect of critical incidents was buffered (Hawley, 1992; Laposa et al., 2003). When management recognized the stress associated with critical incidents and gave encouragement or provided workshops or debriefings, nurses felt supported (Laposa et al., 2003). Such recognition was therefore viewed as positive by nurses dealing with stressors and may help reduce the effects of workplace or critical incident stress ($n = 15$, 30%) (Laposa et al., 2003). Supervisors have a responsibility to recognize critical incidents in the work environment and provide social support for workers (Hudson, 1995; McVicar, 2003; van der Ploeg & Kleber, 2003).

Humor. Humor was also found to be used as a type of social support to help emergency workers deal with critical incidents (Haslam & Mallon, 2003). When dealing with critical incidents the type of humor utilized was termed “gallows humor” or “black humor” (Maxwell, 2003; Moran & Massam, 1997; Scott, 2007). The use of gallows humor by emergency nurses was a way for nurses to relieve stress and tension in the face of a critical incident and was the second most commonly used form of coping in a study of emergency nurses ($N = 173$) (Eager, 2003), as well as with focus groups in a study of emergency nurses (no N reported) (Scott, 2007). The humor may have mitigated the effects of the critical incident (Moran & Massam, 1997) and reduced feelings of grief, sorrow, helplessness and anger (Maxwell, 2003). Additionally, humor allowed emergency workers to share the emotionally charged critical incident (Fullerton, McCarroll, Ursano, & Wright, 1992). Emergency workers were not being disrespectful to their patients by using such humor during critical incidents (Maxwell, 2003), but realized that this humor may be misconstrued if used within hearing distance of the public (Moran & Massam, 1997).

In summary, specific critical incidents have been identified by nurses as being stressful. As previously stated, emergency nurses were exposed to various types of stress: workplace stress, interpersonal stress, and events which were appraised as critical incidents. Nurses were affected differently by these events and some nurses developed critical incident stress as a result of these critical incidents.

Critical Incident Stress

Critical incident stress has been a unique form of stress reaction experienced by emergency workers in their response to emergency situations or critical incidents. The International Critical Incident Stress Foundation defined critical incident stress as:

A state of cognitive, physical, emotional and behavioral arousal that accompanies the crisis reaction. The elevated state of arousal is caused by a critical incident. If not managed and resolved appropriately, either by oneself or with assistance, it may lead to several psychological disorders including acute stress disorder, post traumatic stress disorder, panic attacks, depression, or abuse of alcohol and other drugs (Mitchell, 2004, p. 3)

The surrogate terms for critical incident stress include acute stress disorder, acute traumatic stress, vicarious traumatization, and compassion fatigue. Critical incident stress was not defined by the DSM-IV (American Psychiatric Association, 2000). Such terms, although used interchangeably, also highlighted the effects of exposure to critical incidents for emergency workers (Regehr & Bober, 2005).

Statistics have varied on nurses' reported critical incident exposures in the past year. In a study of 314 nurses, Lam et al. (1999) found that 81.8% ($n = 257$) of the nurses reported being exposed to at least one of seven critical incidents including incidents with children, aggressive patients and families, death of a patient, serious injuries, or handling dead bodies or parts. Another study of 227 nurses found that 58% ($n = 131$) had experienced at least one critical incident in the past year (O'Connor & Jeavons, 2003). The effects of critical incidents may have been cumulative where the nurse was unable to identify an individual incident, but instead found a series of critical incident events that

over time lead to critical incident stress (Burns & Rosenberg, 2001; Laws & Hawkins, 1995; Oster & Doyle, 2000; Regehr, 2001).

Following a critical incident, a nurse may have recalled the sight of a traumatic injury or heard the cries of family members (Burns & Rosenberg, 2001). The nurse may have had difficulty sleeping, withdrew from family and friends, or become uncommunicative (Mitchell & Everly, 2001). A frequent complaint following a critical incident was fatigue (Appleton, 1994; Hall, 2004; Laws, 2001). A large percentage (no *n* reported) of 50 nurses had insomnia following a critical incident while a smaller percentage (no *n* reported) had complaints of headaches, diarrhea, nausea, crying, nervousness, decreased concentration, and agitation (Appleton, 1994). In a descriptive study, Laws (2001) found that nurses ($N = 31$) reported recurring visual images (48%, $n = 15$) or dreams (55%, $n = 17$). Laposa and Alden (2003) studied 51 emergency nurses who described situations where the nurse became upset when reminded of the victim (80%, $n = 41$) or had upsetting thoughts and images concerning a critical incident (52%, $n = 27$) or consciously tried not to think about the critical incident (56%, $n = 29$). In addition, the consequences of unresolved stress may have been burnout (Browning & Greenberg, 2003), acute stress response (44%, $n = 99$) (Rea, 2005) response to a traumatic event or PTSD (12%, $n = 6$) (Laposa & Alden, 2003; Laposa et al., 2003). Therefore, nurses had higher PTSD symptoms than the general public where 4.6% of the general public met criteria for PTSD symptoms (Laposa & Alden, 2003). These symptoms interfered with the nurses' work one month after a critical incident (Laposa & Alden, 2003; Laposa et al., 2003). An additional study reported 90% of nurses ($n = 81$) who work in the intensive care unit (ICU) experienced PTSD-like symptomatology (Allen, 1999).

Critical incident stress may lead to stress-related disorders in emergency nurses (Laposa et al., 2003). Critical incident stress may affect: (a) the healthcare economy, (b) health and well-being of emergency nurses, and (c) care given to emergency patients (Kalia, 2002). Critical incident stress produced costly psychological symptoms and were more likely to visit the doctor, be hospitalized, or have alcohol or drug problems than those not suffering from the consequences of stress (Kalia, 2002).

Signs and Symptoms

Emergency workers with critical incident stress may exhibit cognitive, physical, emotional, and behavioral signs and symptoms (Mitchell & Everly, 2001) as shown in Table 2.

Table 2. Signs and Symptoms of Critical Incident Stress

Cognitive	Physical	Emotional	Behavioral
Blaming others	Fatigue	Shock	Social withdrawal
Confusion	Nausea	Anxiety	Hypervigilance
Poor attention	Muscle tremors	Guilt	Alcohol and drug use/abuse
Decreased concentration	Headaches	Grief	Increased startle reflex
Poor decisions	Diarrhea	Anger	Antisocial acts
Heightened or lowered alertness	Appetite disturbances	Disappointment	Pacing
Poor problem solving	Sleep disturbances	Agitation	Change in sexual functioning
Loss of person, place or time	Tachycardia	Disbelief	
Intrusive thoughts	Hypertension	Disgust	
Nightmares	Vomiting	Depression	
Forgetfulness	Thirst	Inappropriate emotional response	
	Visual difficulties	Crying	
	Grinding of teeth	Feeling overwhelmed	
	Diaphoresis	Nervousness	

	Dyspnea	Irritability	
	Chest pain	Fear	

(Appleton, 1994; Oster & Doyle, 2000)

These signs and symptoms usually occurred 12 to 72 hours following the critical incident but may occur months later (Appleton, 1994; Lewis, 1994). When experiencing symptoms of critical incident stress, emergency workers may be reluctant to report such stress when it occurred or even refuse to acknowledge when they or their colleagues experience critical incident stress (Mitchell & Everly, 2001). Emergency workers may fear being ridiculed by colleagues or being accused of not being able to cope with the job requirements (Wheeler, 1997). These same colleagues also told emergency workers to leave the field of emergency services if they could not deal with critical incidents. Many workers who coped well with violent or life threatening events were often viewed in terms of extreme heroism by their co-workers (Bonanno, 2004).

Emergency nurses, in particular, were often reluctant to report the signs and symptoms associated with critical incidents and critical incident stress. Nurses thought that reporting these symptoms would be viewed negatively by coworkers and administration, since dealing with critical incidents, death, and suffering was perceived as an occupational hazard associated with their chosen career (Antai-Ontong, 2002; Crabbe et al., 2004; Laws & Hawkins, 1995; Mitchell & Everly, 2001). Nurses felt they should be able to cope with critical incidents as part of their job and would therefore not share their distress (Antai-Ontong, 2002). Furthermore, most emergency workers were usually able to deal with critical incidents without lasting effects, but some still did suffer from critical incident stress (Oster & Doyle, 2000). For example, most emergency workers were able to cope with critical incidents and had job satisfaction associated with the

rewards of caring for others (van der Ploeg & Kleber, 2003). Caring for patients during a critical incident created a feeling of confidence and hope in the emergency workers. Emergency workers were less likely to participate in research to study this area when suffering from critical incident stress (van der Ploeg & Kleber, 2003).

Summary

Nursing has been recognized as a stressful occupation (Laws & Hawkins, 1995) with emergency nurses exposed to similar critical incidents as other emergency workers such as firefighters, police, and pre-hospital emergency workers (Antai-Ontong, 2002). Nurses exposed to critical incidents are at risk for developing critical incident stress which may lead to PTSD. It was important to understand factors contributing to critical incident stress since critical incident stress may lead to problems both in the personal and professional lives of nurses (Beavan & Stephens, 1999). The majority of studies examining factors contributing to critical incident stress were done with firefighters, police, and pre-hospital emergency workers. Most research with nurses has been done in other countries and not all studies were done on emergency nurses (Adeb-Saeedi, 2002; Appleton, 1994; Beavan & Stephens, 1999; Laposa et al., 2003; Laws, 2001; O'Connor & Jeavons, 2003). In addition, emergency nurses were exposed to workplace stressors which may have influenced reactions to critical incidents. There is concern that the number of emergency nurses will not be sufficient to meet the nursing needs of the future (Schriver et al., 2003). The Robert Wood Johnson Foundation report on the nursing shortage recommended empowering nurses to change the work environment as one method for nurse retention (Kimball & O'Neil, 2002).

Therefore, studies are needed that describe the experience of emergency nurses in the US with critical incidents. By describing the experience of critical incidents in emergency nurses, an understanding of response to critical incidents may lead to development of interventions which would enable emergency nurses in the US to more effectively handle stress. Therefore, the purpose of this study was to describe the experience of emergency nurses with critical incidents, including identifying strategies that emergency nurses used to manage these situations in the emergency department setting.

Chapter II

Theoretical Framework

The theory of stress, appraisal, and coping by Lazarus and Folkman (1984) guided this qualitative study of emergency nurses' experiences with critical incidents. Theories provide a structure for interpreting data in qualitative research (Polit & Beck, 2007).

In preparing to examine emergency nurses' experiences with critical incidents, several theoretical frameworks were considered to guide the investigation. Initially, the stimulus-response approach to stress was investigated. Selye (1984) defined stress as a non-specific physical response of the body to a demand. Physiological responses represented a disturbance in homeostasis. Adaptation was described as adjustment to stressors in the General Adaptation Syndrome (Selye, 1984).

Physiological responses have been associated with critical incidents; however a stimulus-response approach did not fully explain the impact of the environment on the nurse experiencing a critical incident. Selye (1984) neglected individual and situational factors. Additionally, because the event was considered stressful only if there was a stress response directly related to the event, it was not possible to predict conditions under which certain stimuli were stressors. This approach did not explain the variability in human responses to the same stressor. The stimulus-response approach assigned the stressed individual a passive role. Therefore, the stimulus-response approach to stress was considered inadequate for this study.

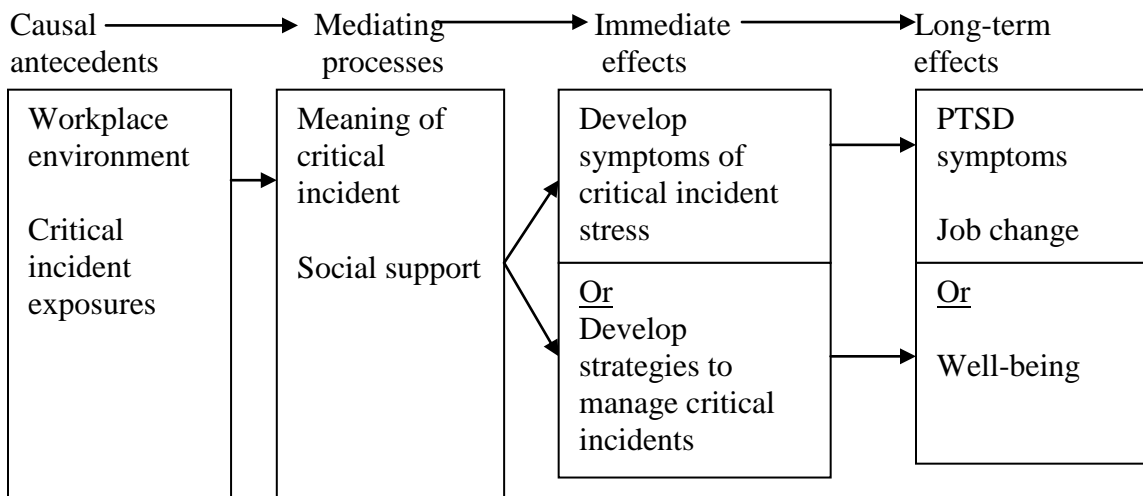
The stress, appraisal and coping theory developed by Lazarus and Folkman (1984) was examined for relevance to critical incident experiences. Inherent in this theory

was the identification that the relationship between the person and the environment exceeded the resources of the individual. The judgment that a person-environment relationship is stressful was based on cognitive appraisal. This theory provided for a more comprehensive explanation of stress, encompassing cognitive and environmental effects on behavior. It described a person's way of dealing with a stressful event through appraisal of the situation and coping mechanisms. Included in the theory were causal antecedents, as well as mediating processes (Lazarus & Folkman, 1984).

Use of the Lazarus and Folkman Theory

Listed below (Figure 1) were the parts of the theoretical schematization of stress, coping, and adaptation that provided the organizing framework to guide the study. The researcher was open to themes that emerged from the data that may not fit into the theory.

Figure 1. Theoretical Framework



Stress

Lazarus and Folkman (1984) defined stress as “a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being. The judgment that a particular person-environment relationship is stressful hinges on cognitive appraisal...” (p. 21). When confronted with a stressful situation a person may respond with a mental or bodily reaction (Lazarus, 1999). The presence of a stressful situation did not mean that the person would develop a reaction since stress was defined by the person’s reaction rather than the event (Lazarus, 1999).

Stressful situations could be categorized into three areas: (a) large scale events involving many people such as natural disasters or wars (Lazarus & Folkman, 1984), (b) major events affecting one or a few people e.g. death of a loved one (Lazarus & Folkman, 1984), and (c) daily hassles, or, the everyday minor irritations which can affect response to larger stressors (Lazarus & Folkman, 1984). Critical incidents could fall into either the first or second category where the large scale event was a critical incident for the emergency nurse or many emergency nurses or the event was an isolated event which became a critical incident for a few or only one emergency nurse. Not everyone responded to the same stressful situation in a similar manner because both the stressful event and the characteristics of the person must be considered (Lazarus & Folkman, 1984). Therefore, people react differently depending upon their appraisal of the event (Lazarus & Folkman, 1984). Stress reactions relied on the person-environment relationship (Lazarus & Folkman, 1984).

Appraisal

When faced with an event the person would use primary cognitive appraisal (Lazarus, 1991, 1999) to determine whether the event is irrelevant, benign, or stressful (Lazarus & Folkman, 1984). When the event was considered stressful to the person, continued appraisal identified the event as either a harm, threat, or challenge (Lazarus & Folkman, 1984). Harm or loss would have already occurred, while threat was the fear or anticipation of the harm or loss (Lazarus & Folkman, 1984). Appraisal of an event as a challenge allowed the person to anticipate some type of mastery or gain (Lazarus & Folkman, 1984). A person who had appraised an event as a challenge would usually feel that they had control of the event, were prepared to handle the event, felt joy in the challenge, and felt more confident and less overwhelmed (Lazarus & Folkman, 1984).

Secondary cognitive appraisal determined what could be done about the event or stressor (Lazarus & Folkman, 1984). The importance of a person's commitments and beliefs also influenced a person's cognitive appraisal (Lazarus & Folkman, 1984). The more important the event or situation, the greater the chance that it would be appraised as stressful (Lazarus & Folkman, 1984).

Factors influencing appraisal included a person's belief about personal control (Lazarus & Folkman, 1984). Other factors influencing cognitive appraisal included unpredictability of an event, how imminent an event was and the duration of the event (Lazarus & Folkman, 1984).

Coping

After a person appraised an event as stressful, the person then determined what they would do to cope with the event (Lazarus & Folkman, 1984). Coping could take two

forms, either problem-focused or emotion-focused (Lazarus & Folkman, 1984). Coping resources included health and energy, viewing oneself positively, problem solving skills, socially appropriate skills in communication and behavior, social support and material resources (Lazarus & Folkman, 1984).

The Lazarus and Folkman Theory Utilized in Nursing Research

Lazarus and Folkman's Theory of Stress, Appraisal and Coping has frequently been used in research studies on stress. This theory has been used to study stress, however no research was found that used the theory to explain emergency nurses' experiences with critical incidents. Some representative studies follow.

Ceslowitz's (1989) study on burnout and coping strategies among hospital staff nurses was guided by the theory of stress appraisal and coping. There was a positive relationship between planful problem solving and reduced burnout ($F = 3.62, p < 0.001$) in the 150 nurses studied. Hays et al. (2006) studied intensive care nurses ($N = 135$) and found planful problem solving (59.2%, $n = 80$) and seeking social support (49.5%, $n = 67$) were used most frequently to cope with stressors in intensive care units. Chang et al. (2006) studied acute care nurses ($N = 320$) in Australia for a relationship among workplace stressors, coping methods, demographic characteristics, and health. The study did not find any coping strategies to be significantly associated with better mental health. A weak association was found between decreased physical health and workplace stressors of dealing with death and dying ($r = .17, p = .01$) and interpersonal conflict with physicians and nurses ($r = .18, p = .01$).

McVicar (2003) utilized the theory of stress, appraisal and coping as a framework for his literature review on workplace stress in nursing. This review identified 21 primary

research studies concerning stress in nursing. Six themes were found in this review including: workload, leadership/management problems, professional conflict or relationship problems with coworkers, emotional demands of caring, shift work, and lack of reward. The review found that nurses differ in response to sources of stress. Individual nurses should be supported to utilize the coping strategies of emotion-focused coping and problem-focused coping when dealing with workplace stressors.

Gillespie and Kermode (2003) used the Lazarus and Folkman theory to study coping in perioperative nurses ($N = 75$) in Australia. Their findings suggested that social support from peers (58.7%, $n = 44$) was a significant coping mechanism, while 15.2% ($n = 11$) of respondents did not utilize any social support. A number of respondents utilized avoidance in dealing with stressors as indicated by 48% ($n = 36$) indicating they would not take part in debriefings.

The one qualitative pilot study ($N = 6$) which used the theory of stress, appraisal and coping as the framework (Burns, personal conversation, November 2006) to analyze the data found three themes for defining critical incidents: helplessness or loss of control, identification with the victim, and strong sensory images and the overarching theme of personal meaning (Burns & Rosenberg, 2001).

Assumptions Derived from the Lazarus and Folkman Theory

1. Emergency nurses may have appraised a critical incident as either a threat or a challenge.
2. Each nurse may have appraised the same critical incident in a different way.

3. When faced with a critical incident emergency nurses would use secondary appraisal to determine what they can do.
4. A variety of strategies existed for dealing with critical incidents in the emergency department

Summary

Lazarus and Folkman's theory of stress, appraisal and coping was relevant as an organizing framework to the study of critical incident experiences by emergency nurses. Critical incidents were stressful situations encountered by emergency nurses that potentially threatened the well-being of the patient, overwhelmed the emergency nurse's coping skills, and caused strong emotional responses (Mitchell & Everly, 2001). Using Lazarus and Folkman's organizing framework, emergency nurses perceived the threats and challenges of the critical incident through cognitive primary appraisal of the situation. Each emergency nurse would appraise the critical events differently depending upon the appraisal by the emergency nurse of one's performance, feelings of control, and personal meaning regarding the event (Lazarus & Folkman, 1984). Then, using secondary appraisal emergency nurses determined if anything could be done about their reaction to a critical event and what possible options for coping were available (Lazarus & Folkman, 1984). Possible mediating strategies to the critical incident included social support, critical incident stress debriefing, or humor with further exploration needed to describe such strategies (Lazarus & Folkman, 1984). The interview guide used the theory of stress, appraisal and coping to guide the interview process with emergency nurses (see Appendix A). Data from the interview were analyzed using this framework, while being open to the emergence of new themes.

Chapter III

Methods

The study used a qualitative descriptive design to describe critical incident experiences of nurses working in the emergency department, including identifying specific strategies that helped nurses manage these experiences. The Theory of Stress, Appraisal and Coping (Lazarus & Folkman, 1984) was used to guide the study (see Figure 1). Nurses working in emergency departments were interviewed regarding their experiences with critical incidents.

The purpose of this chapter is to describe the study methods. The qualitative descriptive methodology, methodological rationale, and theoretical underpinnings are outlined. The procedures for recruiting participants, data collection, data management, and data analysis are described. Human subject considerations, trustworthiness and potential study limitations are also described.

Qualitative Descriptive Approach and Rationale

Qualitative description was chosen as the method of inquiry for the study to describe the experiences related to critical incidents in nurses working in the emergency department. Qualitative description is a method that allows the researcher to describe the phenomenon of interest with minimal interpretation of the data (Sandelowski, 2000). A key benefit of the qualitative descriptive methodology was the ability to obtain an in-depth subjective view into individual experiences to provide a preliminary understanding of this phenomenon with emergency nurses in the US (Sandelowski, 1999). The qualitative descriptive design was desirable for this study because little was known about critical incidents experienced by emergency nurses. In addition, a qualitative design

allowed the researcher to describe the interaction between the nurse and the emergency department work environment (Gallo, Dumas, & Shurpin, 1996).

Naturalistic Paradigm

The naturalistic paradigm identified with qualitative research (Lincoln & Guba, 1985) was used for this study. This paradigm took a holistic approach to the research problem while supporting both a flexible and emerging design (Polit & Beck, 2007). Epistemologically, the naturalistic paradigm fit well with this study as the researcher interacted with participants to explore emergency nurse experiences occurring in their natural work environment (Polit & Beck, 2007). Ontologically, the knowledge gained from the emergency nurse participants revealed multiple and subjective realities (Lincoln & Guba, 1985) regarding critical incident experiences.

Theoretical Framework of the Proposed Study

The Theory of Stress Appraisal and Coping (Lazarus & Folkman, 1984) provided the organizing framework for the study. Emergency nurses were interviewed about their appraisal of the threats and challenge associated with critical incidents in the emergency department as well as suggestions for managing these critical incident experiences.

Setting

Nurses working in emergency departments from two different healthcare systems in Central Massachusetts were recruited to participate in the study. Initially, the plan was to recruit study participants within one healthcare system using a community-based hospital, an urban city hospital, and a level one trauma center. Unfortunately, study recruitment at the urban city hospital and the level one trauma center was not initiated due to a prolonged institution requested delay after IRB approval was granted. These

emergency departments were chosen for access to the study participants at two community-based facilities: Marlborough Hospital (29,000 annual visits) and Milford Regional Medical Center (55,000 annual visits).

Sample

A sample of 20 registered nurses working in the emergency departments at the two community-based hospitals who met the inclusion criteria were recruited to participate in the study. A sample size of 20 was chosen (Morse, Denzin, & Lincoln, 1994) with the intent to interview each participant to elicit information regarding their experiences based on personal knowledge of critical incident experiences.

The researcher used purposive and snowball sampling to recruit study participants from the two different hospitals. Snowball sampling allowed study participants to refer colleagues to the study who would also be appropriate interviewees (Polit & Beck, 2007). Purposive sampling involved choosing those participants who would give the most information to the study (Polit & Beck, 2007). Ten nurses from each hospital were interviewed to explore experiences from different emergency departments. In this study, participants had knowledge and experience with critical incidents while working in the emergency department. Within the constraints of a community-based hospital, participants were chosen for maximum variation sampling which might provide varying viewpoints (Polit & Beck, 2007). Because of the homogeneous population working in these emergency departments, the study participants were a homogeneous group, but participants were chosen for varied experiences with critical incidents. The sample size was determined by the number of participants needed to achieve data saturation (Polit &

Beck, 2007). This occurred by the sixteenth interview when the themes were established and nothing new was forthcoming from the interviews.

Inclusion Criteria

Participants were eligible for this study if they meet the following inclusion criteria:

- Registered nurse;
- Currently employed in an emergency department as a staff nurse including full time, part time and per diem nurses;
- 18 years of age or older;
- Self-identified experience with at least one critical incident in career as emergency nurse;
- Able to read and understand English;
- Able to be interviewed and respond to questions; and
- Willing to sign an informed consent.

Exclusion Criteria

- A registered nurse employed in the emergency department in a managerial capacity; or
- A registered nurse who had participated in any research study associated with workplace stress or violence within the last six months.

Procedures

Recruitment of Emergency Department Nurses

The researcher obtained permission from chief nursing officers and nurse managers of the respective emergency departments for permission to approach the emergency department nurses at the hospitals where the study was conducted. Letters

were sent to department chairs of the emergency departments advising them of the study. An Institutional Review Board (IRB) approved advertisement was posted in the emergency departments. In addition, the researcher attended department meetings to present the study information and ask for participants. Potential participants contacted the researcher via an email used only for the study or by calling a designated phone number. The email program and the answering machine had a password protected code that was only accessible to the researcher. The researcher then set up a time to meet in person or arranged a phone call to discuss study participation. If the participant agreed to participate in the study, a mutually convenient time and place was set up to conduct the face-to-face interview. The interviews took place in conference rooms or offices within the facilities.

Data Collection

Qualitative data were collected through face-to-face semi-structured interviews. Demographic data were collected first followed by in-depth interviews (using an interview guide, Appendix A). The interviews lasted between 30 to 90 minutes. Demographic data included age at the time of the interview, self-reported ethnicity, gender, number of years as a nurse, work status, educational background, religious affiliation, health status, stressors outside of work, certifications, and exposure to critical incident(s) (Appendix B). The participants were offered a \$5 Dunkin Donuts card as a token of appreciation for participating in the study.

Informed written consent was obtained from the participant prior to the face-to-face interview. The participant was given a copy of the signed consent. The original consent was retained by the researcher in the participant's study file. The study

participant was assigned a study number to be used on each data form, audiotape, and transcript to protect the confidentiality of the participant. A list of participants and their assigned numbers was maintained in a locked file cabinet accessible only to the researcher. Any electronic data were stored on a password protected USB thumb drive and computer hard drive. All study data will be destroyed within 5 years of study completion per IRB policy. The dissertation chairperson had access to the study data and participant information in order to verify data quality.

The researcher evaluated the interview guide questions after the first interview to ensure their accuracy, understandability, and appropriateness for the purposes of this study. The researcher was open to emergent themes that occurred while conducting the interviews. The same interview guide questions were used for all interviews with revisions of the questions occurring following discussion with dissertation chair. The questions were more specific concerning appraisal of the critical incident and who supported the nurses following the critical incident. The researcher simultaneously conducted interviews and analyzed the transcripts for emerging themes. The researcher was also open to suggestions from the dissertation chair who listened to two taped interviews. The dissertation chair gave suggestions on the wording that the researcher was using in the interviews which helped interviewees answer the questions. The dissertation chair also read all transcripts of the interviews with attached field notes.

The participants were asked if they were willing to be re-contacted, to respond to the researcher's interpretation of emerging themes. This was considered to be a member check and helped establish credibility (Lincoln & Guba, 1985). Emails were sent to five study participants listing the themes and subthemes and then describing the themes and

subthemes in detail. Responses were received from two of the study participants confirming the themes. One participant discussed the personal attraction to the themes and emphasized the importance of debriefings following a critical incident to allow a forum to “sort through our feelings, concerns, and fears.” The other nurse stated she agreed with the themes and found it interesting that commonalities can be found among nurses who experience such personal connections.

Field notes were kept by the researcher to describe observations made, including body language and emotional reactions of the participant and the time and setting of the interview. In addition, the researcher reflected upon her own thoughts at the time of the interview, which included biases and personal reactions to the interview. Additional reflections were made on the effectiveness of methods and questions used in the interview. These notes were dictated into the tape recorder at the end of each interview and included in the transcriptions. The field notes provided a context for the interview when analyzing the data. The field notes, reflective remarks, code books, and correspondence were available to the dissertation chair to establish an audit trail to enhance confirmability.

Data Management

Demographic data were entered into an SPSS file and analyzed using SPSS 15.0 for Windows (SPSS, Inc., Chicago, IL, USA). Descriptive statistics were used to describe the sample characteristics. All interviews were audiotaped and transcribed verbatim by a professional transcriptionist. NVivo 8 software was used to manage and organize the qualitative data (QSR International, Doncaster, Victoria, Australia). The researcher proofread all transcripts by comparing them to the audio tapes (Sandelowski, 1995).

Data Analysis

Qualitative content analysis was used to examine the data for this study and is the analysis of choice in qualitative descriptive studies (Sandelowski, 2000). Content analysis was an appropriate choice for a nursing study with sensitive information such as found in this study (Elo & Kyngas, 2008). With this type of analysis, the researcher looked at the text data and used codes, patterns, and themes to classify the data (Hsieh & Shannon, 2005). The transcript audiotapes were listened to following the interview and then each transcript was read for overall content and compared to the audiotape. A summary of each transcript was written. Then the researcher proceeded to examine the descriptions of the critical incident experiences, which came from the interview question, “Tell me about your critical incident experience.”

The researcher studied each experience separately and then across all the transcripts. Sequential qualitative analysis was conducted as each interview was completed. Excerpts from the transcripts were grouped within NVivo 8. These excerpts would be considered units of meaning and were sentences or paragraphs related by context or content (Graneheim & Lundman, 2004). These units of meaning were given a label or code (Graneheim & Lundman, 2004). An Excel spreadsheet (Microsoft, Inc., Redmond, WA, USA) was developed to examine similarities or differences with critical incident experiences by age, experience, shift, and education.

Study participants described experiences with critical incident, their feelings or connections with the critical incidents, their response to the critical incidents, and the support from colleagues and family, as well as lingering effects of critical incidents and strategies for dealing with critical incidents. Categories were developed based upon the

predetermined areas of interest to describe the phenomena (Elo & Kyngas, 2008). From these content areas and categories, the underlying themes and subthemes emerged (Graneheim & Lundman, 2004). A descriptive summary of the data was developed and included quotes from participants to support the emerging themes (Sandelowski, 2000).

Trustworthiness

Trustworthiness was established through credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). “Credibility refers to confidence in the truth of the data and interpretations of the data” (Polit & Beck, 2007, p. 196). To achieve credibility, all interviews were done by the researcher and sufficient time was allotted to each interview. Participants were also chosen for their experiences with a variety of critical incidents (Graneheim & Lundman, 2004). The researcher asked for peer debriefing from her dissertation chair to ensure credibility. Discussions between the dissertation chair and researcher were held following reading of each transcript to discuss categories (Graneheim & Lundman, 2004). Lastly, member checks allowed the researcher to have subjects correct errors and add information to ensure credibility (Lincoln & Guba, 1985). In this study, participants who were contacted did not find any errors or need for additional information.

“Transferability is the extent that the findings can be transferred to or have applicability in other settings or groups” (Polit & Beck, 2007, p. 202). Transferability was enhanced by describing the population and context of the research in depth (Lincoln & Guba, 1985). “Confirmability or objectivity is degree to which study results are derived from characteristics of participants and the study context, not from researcher bias” (Polit & Beck, p. 196). Dependability and confirmability were achieved through an

audit trail. An audit trail has three parts: the raw data prior to coding, the analysis of the data, and the findings (Wolf, 2003). The researcher consulted with the dissertation chair after the first interview and then every third or fourth interview and also had the advisor examine the audit trail, reflexive journals, and field notes. In addition, the dissertation chair double checked and verified coding.

Reflexivity

In qualitative studies, the researcher became the instrument and was intimately involved in data collection and analysis. It was therefore important to reflect upon biases the researcher may have, a term called reflexivity (Polit & Beck, 2007; Smith, 2006). This researcher had 16 years experience with critical incident stress management, pre-hospital emergency experience, and emergency nursing experience. The researcher had personal experience with critical incidents in the care of patients. She also has led critical incident stress debriefings and attended critical incident stress debriefings. She was a member of two critical incident stress management teams. While conducting the interviews and analyzing the data the researcher remained cognizant of these potential biases. These potential biases were discussed with the researcher's dissertation chair and written in a reflective journal.

Protection of Human Subjects

Approval for the proposed study was obtained from UMass Medical School/UMMHC Committee for the Protection of Human Subjects in Research and the Milford Regional Medical Center Institutional Review Board. Participants were informed about the study purpose and procedures of the study. They were told about their rights, including the assurance that: (a) they may withdraw from the study at anytime without

jeopardizing their employment; (b) they may ask questions before, during, and after the interview; (c) they may choose not to respond to any of the specific interview questions; (d) their responses will be kept confidential and private; (e) all documents related to the participant, including the audio taped interview, will be locked and stored for five years per IRB policy; and (f) care will be taken to ensure anonymity of participants in any published work (Richards & Schwartz, 2002). Each participant was asked to sign an IRB approved consent form.

Risks

There were no physical risks associated with study participation. Participants were told there were no direct benefits to participation except for providing information that will help other future emergency nurses who experience critical incidents. However, the interview could have been potentially distressing by bringing up memories of previous traumatic events. It was possible that the interview could have stimulated a negative emotional response while participants were sharing their experiences with the researcher. Participants who might become distraught would have been asked if they wanted to stop the interview. Participants would then have been assessed by the researcher for any signs of severe distress or suicidal ideation that would warrant immediate referral to Emergency Mental Health services on campus. Although many of the study participants became tearful or cried during the interviews, none of the study participants required a mental health intervention.

Summary

This study used a qualitative descriptive design to describe the experience of emergency nurses and critical incidents. The Theory of Stress, Appraisal and Coping (Lazarus & Folkman, 1984) was used as an organizing framework for this study. Through

qualitative content analysis, the researcher organized, summarized, and reported common themes related to the phenomena of interest.

Chapter IV

Results

Qualitative descriptive methodology was used to study the subjective experiences of emergency nurses with critical incidents. Face to face semi-structured interviews with 19 emergency nurses provided 131 single-spaced pages of text depicting the experiences of emergency nurses with critical incidents. The two overarching themes that emerged from the interviews were: *critical incident experiences* and *aftermath*. The subthemes included *connections*, *workplace culture*, *responses*, *strategies*, and *lasting effects*. A detailed description of the themes and subthemes is summarized and includes illustrative quotes.

Participants

The study participants meeting the inclusion criteria included 19 emergency nurses from two emergency departments in community hospital settings. Neither facility is certified as a trauma center. However, the study participants were frequently exposed to traumatic critical incidents as part of their work. Recruitment took place between June 2008 and September 2008. Frequencies were run and revealed no missing demographic data (see Table 3).

The sample included 19 females with a mean age of 46.95 years (range 33-61). One male participant was excluded from this analysis due to lack of other male participants to conduct constant comparative analysis (despite recruitment attempts to interview male emergency department nurses). All participants were Caucasian. Participants worked as nurses for an average of 17.71 years (range 0.75-40) and in emergency nursing for an average of 12.22 years (range 0.50-40). Eight nurses (42%) had

baccalaureate degrees, seven (37%) nurses had associate degrees, and four (21%) nurses were graduates of diploma programs. Study participants worked an average of 34.84 hours per week (range 24-60). The majority rated life outside of work as mildly stressful ($n = 13$, 68%) and their health as excellent ($n = 11$, 58%). Only one study participant received critical incident stress management (CISM) education.

All study participants experienced at least one critical incident in their careers, with the majority ($n = 16$, 84%) experiencing one to five events in their careers (mean 4.37, range 1-15). Three study participants experienced greater than five critical incidents in their careers (range 6-15 events). The study participant who worked the longest in the emergency department (40 years) identified 15 critical incidents and the participant with 24 years experience in the emergency department identified 10 critical incidents.

Although the participant who identified six critical incidents only worked for 8 years in the emergency department, she had 30 years of experience as a nurse. All but one of the study participants ($n = 18$, 95%) were certified in advanced cardiac life support (ACLS) and ($n = 16$, 84%) pediatric life support (PALS).

Table 3. Study Participant Demographics

Variable	N	%
Age		
33-39	4	21%
40-49	4	21%
50-59	10	53%
60 and over	1	5%
Gender		
Female	19	100%
Marital status		
Single	1	5%
Divorced	5	26%
Married	13	69%

Variable	N	%
Ethnicity		
Caucasian	19	100%
Religion		
Catholic	13	68%
Protestant	4	21%
No religious affiliation	2	11%
Years as a nurse		
0.5-10 years	7	37%
11-20 years	4	21%
21-30 years	6	32%
31-40 years	2	10%
Years in ED		
0.5-10 years	12	63%
11-20 years	2	11%
21-30 years	4	21%
31-40 years	1	5%
Highest level of education		
Diploma	4	21%
Associate degree	7	37%
Baccalaureate degree	8	42%
Hours worked per week		
24 hour per week	7	37%
32 hours per week	5	26%
36 hours per week	1	5%
40 hours per week	2	11%
Over 40 hours per week	4	21%
Stress level outside of work		
Not at all stressful	0	0%
Mildly stressful	13	69%
Moderately stressful	5	26%
Very stressful	1	5%
Health		
Excellent	11	58%
Good	7	37%
Fair	1	5%
Member Emergency Nurses Association		
Yes	5	26%
No	14	74%
Certified Emergency Nurse		
Yes	3	16%
No	16	84%
Training in critical incident stress management	1	5%

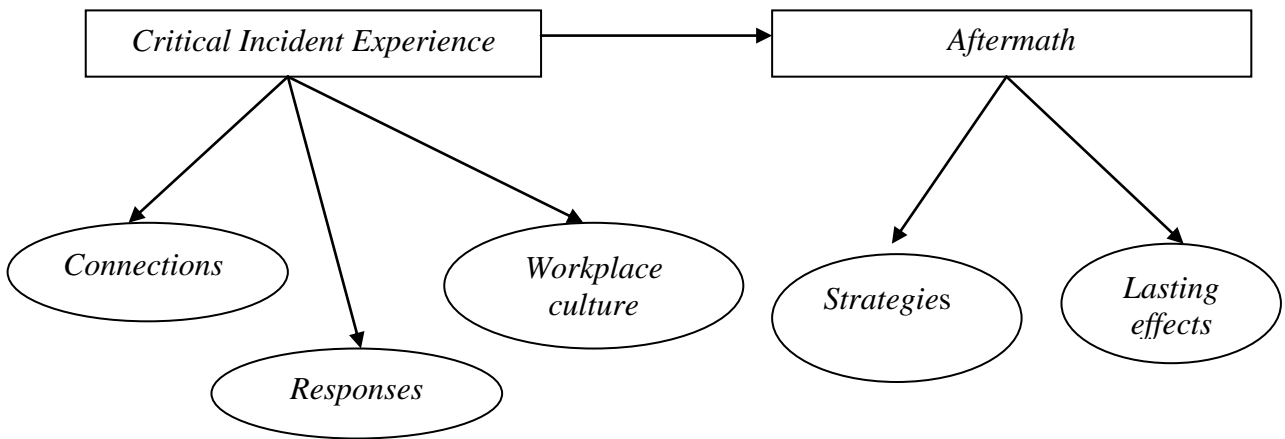
Variable	N	%
Number of critical incidents in career		
1-5	16	85%
6-10	2	10%
11-15	1	5%

Themes and Subthemes

Two themes and five subthemes emerged as emergency nurse participants described their experiences with critical incidents and the strategies they used to manage critical incidents. Under Aim 1: Describe emergency nurses' experiences with critical incidents, the theme of *critical incident experiences* included three subthemes, *connections*, *responses*, and *workplace culture*. *Connections* involving personal and community-related *critical incident experiences* were described by many emergency nurses. *Responses* included the reactions of emergency nurses to the critical incident which were physical, psychological, and spiritual in nature. *Workplace culture* can be thought of as unwritten, but assumed, expectations of acceptable behavior and environment for the nurses working in the emergency department. Participants also described their *responses* to *critical incident experiences* as influenced by the perceived workplace culture.

Aim 2, Examine strategies identified by emergency nurses to manage critical incidents in the emergency departments had one theme, *aftermath*, and two subthemes, *strategies* and *lasting effects*, that emerged. The *strategies* included how emergency nurses dealt with critical incidents. *Lasting effects* included the memories and triggers emergency nurses associated with critical incidents. Figure 2 depicts the themes and subthemes that emerged from these data.

Figure 2. Themes and Subthemes



Critical Incident Experiences

The first theme to emerge from the data was *Critical Incident Experiences*. Study participants identified having experienced from 1 to 15 critical incidents in their careers as emergency nurses. The 19 participants were asked to describe one incident in depth, but they actually discussed 29 different critical incidents. Many of the participants discussed the initial incident and then proceeded to discuss an additional incident that they remembered. Of the 29 incidents described, 15 (51%) involved children. The three subthemes that emerged from the critical incident experiences were *connections*, *responses*, and *workplace culture*.

Connections. Study participants described personal and community-related *connections* related to their critical incident. Particular *connections* included (a) anticipating seeing someone that reminded them of themselves or family members (i.e. as a parent or mother), (b) knowing the patient through the community (i.e. school or family friends), or (c) having a room full of community rescue personnel who knew each other and the patient. The nurse may have personally known the patient or family or the patient

may have reminded the nurse of a loved one. Study participants gave examples such as expressing fear when awaiting the arrival of a patient who they thought might be one of their relatives. During a critical incident, participants also found themselves thinking about “it could have been me” when caring for these patients. These thoughts stemmed from *connections* with critical incident patients who shared similar family demographics with the nurses (i.e. age of children, partner, or parents). When describing a critical incident involving the death of a woman who was five days postpartum one nurse observed this *connection* when stating, “My thoughts were, oh my God, she’s a young woman. She has a brand new infant and then another child at home. It could have been me.” Another study participant found a comparable *connection* with the patient in a number of ways, “She had one son and a husband. And I have one son and a husband. I looked at her chart and she had my mother’s birthday.”

Study participants ($n = 3$, 16%) also found personal *connections* when receiving information on incoming patients over the radio while awaiting a patient’s arrival. Often the nurse was fearful that she knew the patient or feared that it might be her own child. Three study participants described the anxiety and anticipation they endured while awaiting the arrival of a patient after hearing the brief report from the transporting ambulances. “...a 24-year old male. I thought, I have a 24-year old son. That hit me like a truck. What if it’s my son? What if it’s one of my son’s friends? What if someone comes in here that I know?”

A second nurse feared the worst after hearing the radio transmission to the emergency department. “And I called home. My son was 17 at the time. So the 8 to 10 minutes that I waited for this kid to come through the door, I was convinced it was my

kid...All you can think is, oh my God, that could have been mine.” A third nurse recalled, “He was only 19 at the time, this kid. I had a 19, my son was 19. Okay? I was saying this could be my son. I just totally related this could be my son.”

The *connection* to the loss of the patient was also described through a participant’s own childhood experiences. Recalling the death of a young husband and father the nurse described her experience as:

Then the woman said, ‘How am I going to raise my children alone?’ The doctor didn’t say anything and I said, ‘My father died when I was six’ and we just talked for like 20 minutes and I think it helped.... You know, the whole having lost a parent, imagining how hard for the widow and the children.

The recurring subtheme of *connection* by participants from having children or family of similar age to the patient also occurred ($n = 8, 42\%$). As a nurse described this type of reaction by staff to the death of child who choked due to eating a fruit rollup, “It was just so sad because it hit everybody because they were either grandmothers or mothers, you know.” Participants especially were affected by children of similar age to their own as one participant noted. “They are always children, the ones that really stick with you, you know?” and another “Children are always yeah, horrible...No one should lose a child.”

Participants’ *connections* with children also involved sudden unexpected critical incidents that were perceived as potentially preventable. For example:

Listening to the mother say that if she only knew the Heimlich. It was just such a stupid thing. It was just so preventable. I think that is why it just really, really bothered us so much. This is a normal kid, running around, playing, having a

good time, choked, and died. It just made you realize how fragile life is. Other pediatric deaths have been kids that have been ill or sudden infant death syndrome (SIDS), those are horrible. This was, it was just the normalcy of the child's life a few minutes beforehand.

Participants also had a *connection* as "humans" to critical incident experiences in imagining themselves in the role of the patient or family member. For example a study participant described this *connection* to the parent of a child as follows:

We had a child whose father ran him over with a lawnmower and he had a leg amputation. That was harder for me because I couldn't imagine being in their place. That was another one that sticks with you not so much that I felt really terrible but the poor parent in that situation.

An additional study participant described this *connection* to the parent with empathy:

Putting yourself in that situation, you can feel what she's [the mother] going through. You kind of justified it in your head. At least I do. He's [a child who has died of SIDS] got to be in a better place. So that's how I justify it. But then the mother just kind of threw us all over the edge. It was awful. I think it was because we all could just relate to her. Kind of just figure out where she was right now.

In addition to dealing with the death of a child, one nurse found that the child was known to her. "Not only was she four years old and her life was hanging by a thread, but I knew her." The community hospital emergency department found other nurses knowing the critically injured children as one nurse found herself caring for a child who was the classmate of her son.

These *connections* made the critical incident more memorable and personal for the study participants. The *connections* were not the only aspect of the critical incident identified. Study participants also discussed the *workplace culture* as a subtheme of *critical incident experiences*.

Workplace Culture. As one study participant with over 24 years experience in the emergency department explained it, “Nursing really is a culture. It has its own language. We’re a tribe. Who’s a survivor? Just the fact that nurses are still standing in an ER after so many years of being in an ER.”

During the critical incident itself the *workplace culture* was described as expecting certain behaviors described as: “carry out the duties I was trained to do,” “keep up,” and “keep going through the motions.” Overwhelming, busy, crowded environments were observed by study participants as emergency nurses expressed “give us room,” “trying to keep her [peer] calm” and “listening to everybody around,” “needing to do the right thing,” “what they were supposed to do,” and “feel that we were doing something.” Some new nurses described the need to “leave the room,” “step back,” or “just keep running around.” Experienced nurses shared the need to be the leader to, “stay in control,” or “keep myself intact,” and the need to be the “dominant” person when overseeing the event including helping less experienced staff. One participant shared this type of workplace culture when she asked staff to leave the event and stated, “It’s a lot on your shoulders at the same time, you know, because, seeing if one is going to crumble and just can’t handle it. And one did. I had to ask her, ‘I said go outside. Get some air.’”

The *workplace culture* specifies that emergency department nurses stay in control, continue their job, and not show their reactions. Such reactions were described by

participants as hidden from co-workers and only expressed when support was given by peers. For example, one participant stated, “I felt so raw and I wanted to be....I didn’t want to be seen that way. I didn’t want to be, I didn’t want all my coworkers to see me that way.” Study participants did not feel comfortable crying in front of others and only allowed themselves to lose control when they were away from their colleagues. “I have to stay in control and be the strong one. I crumble on the way home lots of nights,” stated a study participant with many years of experience.

Following the death of a young police officer, one participant shared the difficulty of trying to keep her emotions inside. She stated, “I was trying to make a beeline for the door and somebody hugged me. That was it. Everything came out. I just ran for the door. On the ride home I cried. And then later on I did talk to coworkers.”

Another participant shared a similar experience in trying to keep herself intact until she was able to leave work:

Well, one of the other girls first, because I almost started crying in the room and she pinched me really hard. ‘Don’t do it here.’ I said, ‘I won’t. I won’t’ and I didn’t. Then I went out to my car and she actually called me and said, ‘Are you all right?’ She was crying too. She was in her car crying all the way home. I was in my car hysterical.

Some participants felt supported to show their reactions within their workplace. One nurse described an incident thinking it was her son being transported to the emergency department. She waited for 10 minutes in fear without telling any of her colleagues. “Nope, I didn’t say a word.” She was unable to stay in the patient’s room and

help with care, but felt supported by her colleagues' reaction to her leaving the room and described it as follows:

The times that I've seen somebody fall apart for whatever reason, whether it's something going on here or something going on at home, there are always one or two people, always, you always kind of look around and pick the ones that you know that they're the closest to and that person gets up and goes, 'I'll go in.' It's always the back room where we just were. And they go in and talk to them and usually, you know, they either pull themselves together and somebody gives them lots of support and they're okay or they go home.

Another study participant described support she received from colleagues following a critical incident with the death of a child:

I had some coworkers that were very supportive. I remember the whole thing vividly. There was one particular coworker and I just looked at her and she looked at me and it was almost a change of shift. She was coming in and the second I saw her, I just cried and cried for a good 10 minutes or so and just let it all out and gathered my thoughts.

The *workplace culture* may involve times where colleagues' disapproval or negative opinions of the participant's reaction to the critical incident are perceived. An example provided by a nurse participant regarded her sadness about the death of an elderly patient that she feared the *workplace culture* would not approve of or understand. She stated, "Is everyone like looking at me because I'm feeling sad because this baby had died two days before and I could sense that there was, 'Oh well, it's better that she's 96.' Obviously I felt the same way."

Another participant was concerned about colleagues' opinions of her reactions to the critical incident as disapproving resulting in uncertainty and frustration regarding support in the emergency department *workplace culture*:

You wonder sometimes how people view you...you know, 'Oh please, be quiet. You'll cry about anything.' So you know who you can talk to and who you can't. So, there are a couple of people. Yeah. I know that I can talk to.

Other study participants expressed their concern about the *workplace culture* and how colleagues would view them as newer employees, "Oh, my God, get yourself together...Why do you think this has only affected you?" A study participant who had been a nurse for less than a year was concerned about colleagues' reactions and the appropriateness of allowing emotions to show "...I'm so new at this...I'm still learning the dynamics if it's okay to feel emotional..." Not knowing what to do in this culture, a participant asked for help as, "Never done this before, please guide me..."

Conflicting expectations can also arise from management feedback given to nurses as shared in the following description:

When I came back, one of the managers had spoken to me and felt that maybe this department wasn't for me, which that was a real negative impact...It made me feel like it wasn't okay for me to have any emotion after it was all over...I felt that that was very inappropriate. I did speak to another manager. There were two at the time, the assistant manager, the one who wasn't supportive and the manager, who was very supportive...But it was unfortunate that I ended up having to go to my manager to tell them about the incident and the one who was the key manager felt that if I hadn't reacted that way, then there was something

wrong. It gave me some reassurance that it didn't interfere with my performance on the job.

Some participants described their experiences within the *workplace culture* environment as supportive. Following a critical incident during her first year in the emergency department a participant stated:

I was afraid to come back to work. Some of the girls I worked with who were on the team with us. Oh yeah, we talked. Some of them have been in the ER a lot longer than I have. A lot of them have said to me, 'You know, you did really well.' I told them what happened to me on the way home from work and they said, 'You're gonna feel that. You're human.' They talked to me. 'It's okay. It's okay to feel like that.' It's the job in the sense. It's the way it is.

The feeling of support was also echoed by a study participant as, "Yeah, the way we usually deal with it is we've got such a good group here at the hospital, is that we just deal with stuff with each other. We just have a great communication kind of thing just with coworkers you know. Because our group is close, we can just call each other."

The emergency department may also have many visitors, family members, and other emergency personnel creating a chaotic, stressful atmosphere during and following a critical incident. For example, following the death of a 5-year old, in addition to the mother's screams of anguish, nurses described the scene:

We took a walk and we were crying. There's police, fire, medics, the mayor, you know. Everybody was here. Which I thought made it worse. Way too many people here. Step back. I mean they were outside the trauma room... There was twice that I had to say, 'You need to either go outside or you need to be in the

nurse's station. You need to give us room.' I mean, because we're running out and there are firemen all over the place. Cops, we don't need you here. And they really didn't. I didn't like that. I had a hard time with that.

A common situation can also occur regarding the challenge of facing the patient's family or friends who wish more could be done to save a patient's life. An example of such a critical incident involving a police officer was shared:

The area outside the curtain of Room A started to fill up with state troopers. So there were all these people out there. You knew they were there... We came out and it was the troopers we saw first and the doctor said, you know, 'I'm sorry.' The one trooper said, 'Well can't you go back and try some more?'

The additional burden for these nurse participants involved their own community connections creating stress and chaos as shared by one participant:

My stress was not the external disaster, the extra people, the trying to take care of the regulars while you're trying to take care of your friends, but it was more the community aspects where everybody knew somebody because it's a community hospital... and it was more the community aspect where people who were being brought in were friends and relatives and partners and stuff. As an entire being, the department was more chaotic than usual and handled with less efficiency for that full week.

At times the way study participants dealt with a critical incident was complicated by the busy work environment. A major part of this environment includes job responsibilities that do not usually allow time for emergency department nurses to process the *critical incident experience* due to other patient care demands and needs that

require attention. The following participant description summarizes this busy environment in the emergency department and the *workplace culture* expectations:

Unfortunately, in a busy ER you still have to continue on. So you just, you know, do everything you need to do and then you still have to go out and treat all the rest of the people and then by the end of the day, as everybody's walking out, it kind of hits you. I think everybody goes home and deals with it however they deal with it. But you have to really just separate and then just say okay, well, on, here we go back into the mainstream and taking care of the rest of the people and because life doesn't stop.

This subtheme of a *workplace culture* that involves an environment of work responsibilities where many nurses are forced to put off dealing with their reactions is echoed by other study participants as follows:

Where I was working at the time it's hard because it's a high volume area and, you know, you move on to the next thing rather quickly. So I think that you kind of have to put it into your back pocket and be able to deal with it later on, after the end of your shift or whatever.

Another participant stated:

The hardest thing is just being able to say, 'Whew, throw me the next terrible thing that's coming through the door,' and being able to regroup and put that thing away for a little while and then maybe if it's a bad day, you know, kind of take them all out and flush them later. Yeah, not right away. Yeah, you can take a couple of minutes if you need to but it's kind of hard in the emergency

department. You know, they kind of expect you to be able to move onto the next thing. Strong personality I guess.

Several participants suggested that the *workplace culture* includes dealing with other patients getting upset when they are waiting for care during a critical incident. One participant stated:

I can remember being really angry at the patient that I had to go back to because she was a demanding woman and I just wanted to shake her and say, ‘Do you know what just happened here?’ You know. I was really angry by that. I had to move on and do what I had to do at the time. But I recall that really specifically.

Another participant described this situation as follows:

I had a patient that was a little perturbed that he was waiting...He was a young gentleman. I had gone back to take care of him and he got really upset and said, ‘What did somebody die up there?’ That really hit me.

Nurses described having to apologize for delays to yelling patients waiting to be seen amidst a very busy environment. Overall, the environment and *workplace culture* frequently do not support a break to allow time to react to what just. Emergency nurses realize that they have to keep going despite their own responses regarding the critical incident.

Responses. Physical, emotional, and spiritual *responses* to critical incidents were described by the study participants. These *responses* occurred prior to, during, or after the critical incidents. Physical *responses* included crying (the most common response), shaking, having an “adrenaline rush,” screaming, collapsing (after the incident), and walking away. Emotional *responses* described included “fear,” feeling “awful,” and

“threw us over the edge.” Spiritual *responses* included “compelled to pray” or notifying a priest.

Overwhelmingly, study participants ($n = 15$, 79%) identified crying as their most common *response* to a critical incident. Some chose to cry by themselves ($n = 5$, 26%), while others cried with colleagues ($n = 5$, 26%). Some study participants discussed crying on the way home from work after a critical incident ($n = 5$, 26%). The place where a study participant chose to cry was determined by the *workplace culture* and whether it discouraged or supported emotional expression.

When describing her reaction to the critical incident one nurse stated, “Did I cry all the way home? Yeah. Do I cry in front of the parents? Yeah. You know, I mean they can see it’s okay for them to see that we’re human and we’re upset but being in control is a different thing.”

A nurse with one year in the emergency department describes her *response* to her first code:

It was like all of sudden, oh my God. It was a human life. Because it really was my very first critical situation. Oh God. I got in my car and as soon as I left the parking lot, I broke down and cried. I just cried and cried and cried. My whole body just kind of, it just let loose. I was crying. I was shaking and I was crying and my brain was going over that whole incident and replaying things.

Many nurses ($n = 5$) spoke of crying in their cars after leaving work or when they arrived home. For example, one participant stated, “I went home that night and my son was watching TV and I walked in the door and looked at him and started crying again. He

said, ‘What?’I was just crying my eyes out. All I could say was, ‘It wasn’t you. It wasn’t you.’”

Study participants described a number of other *responses* to critical incidents that may have lingered for up to a week. Symptoms such as sleep disruptions, nervousness, withdrawal, anger or irritation, and memory or concentration problems occurred. One participant described it as follows:

I was shaken, tremulous and I was unnerved for a good week after that. I didn’t sleep that great. I was able to get through my activities and come back to work but it kind of just sat in my mind wondering how he made out and how everything went. I kind of carried it for a short period of time.

Another nurse became withdrawn and stated, “I didn’t want to talk to anybody about it. I didn’t want to have to do it again,” referring to her reticence to discuss the incident again. A third nurse expressed her emotional response as, “I can remember going home and I was in a foul mood. I got home and I was making supper and I was quiet.” The fourth nurse described her conflicting responses to the critical incident. “I was so angry... I laugh... Isn’t that horrible? I don’t think I cried right away but a couple of tears at supper, or whatever, when you can sit back and think of how crummy it was that happened.” In addition physical symptoms occurred as responses to the critical incidents in the form of “heart pounding,” “sense of panic,” and “kind of almost like a sick feeling in your stomach.”

One study participant described her *response* when thinking her son was the patient as:

Just scared. I was just so scared. I think I was scared for a week after. I probably didn't eat for the whole rest of the shift and I'm a big eater. I was just sick to my stomach. You know that flip floppy feeling for the rest of the night. It was rough. Yet another nurse described the lingering effects of the response to a critical incident, "I was exhausted the next day." And lastly, following the death of a 24-year old one nurse said, "My heart was pounding. You know, almost the sense of panic."

Usually *responses* occurred immediately after the incident, but sometimes they occurred during the critical incident. One study participant stated, "I was shaking so much, I wasn't about to draw up meds. In the middle of it, you want to run away. You're kind of saying to yourself in the back of your mind, oh, this really isn't happening."

Two nurses described the effects of adrenaline during the critical incident. The first nurse described her *response*, "Physical, I was shaking. I was really shaking. I was pumped up. I think it was my adrenaline. I was pumped up." The second nurse described this type of *response* during a critical incident involving an incident with a 2-year old child:

It was kind of like a flight or fight feeling. The adrenaline was really high. I was very alert to what was going on. I was very afraid that this boy was going to die. My heart was racing, sweaty, just trying to keep my mind from being confused. I was just trying to keep diffusing myself so that I could make sure that we did all the things that happen in a pediatric protocol code and just to make sure that everything was done that we could do to help this boy and his family.

This nurse was able to function during the critical incident, but then at the end of the critical incident she discussed her *response*, "...we were in the middle of trying to

clean things up and it just, I excused myself from the coworkers and went in the back room and I just, I started to cry. It was like I let it all, there was a letdown and it all came.”

Another nurse was able to stay calm during the critical incident and described what happened after the critical incident:

And then it’s always afterwards that you see them [patient] as a person. It’s always afterwards when you bring the family in and you say that was somebody’s sister, mother, or grandmother, or aunt. In fact, that’s when it hits you. That’s probably the worst time. That’s when all your emotions come in and you cry.

From the theme, *critical incident experiences*, study participants described their personal experiences with critical incidents and the subthemes of *connections*, *workplace culture* and *responses*. These descriptions included the experiences before, during and after the critical incidents. The second theme, *aftermath*, included two subthemes, *strategies* and *lasting effects*, where the study participants’ described the *strategies* for dealing with the critical incident and any *lasting effects* from the *critical incident experiences*.

Aftermath

The theme of *aftermath* described the time period following *critical incident experiences*. The descriptions revealed this *aftermath* theme as a separate time when participants (a) found informal ways to reflect on or reframe what happened, (b) chose whether to share or not to share with colleagues or family, and (c) still recalled the critical incident event years later. Very few participants in this study had a formal debriefing and most dealt informally through the subtheme of *strategies* by talking with

spouses, family, or friends. Those few participants who had a debriefing found it very helpful to them. Some participants chose to not talk with others (including not bringing it home to their families) but instead became involved in ritual daily activities to move on. The subtheme of *lasting effects* was described by many participants through remembrance of events from years ago as if “it happened yesterday.” Detailed descriptions of the critical incident could still be provided by many participants as one shared:

I’m reframing it. Absolutely, sometimes you have to say, you know, it’s a movie. The movie is out in 5 hours. No popcorn. Let’s go. Sometimes I do that. But it’s funny how you can remember critical incidents like that girl and then that guy with the shot in the head and the guy with the glass of water.

A review of the subthemes *strategies* and *lasting effects* described informal ways emergency nurses functioned in the *aftermath* of critical incident experiences and how such occurrences remain with many for a lifetime.

Strategies. Study participants discussed *strategies* that they utilized following *critical incident experiences* which included informal *strategies* such as talking with co-workers, family members, or friends who are also in healthcare or formal *strategies* in the form of debriefings, defusing, or speaking with mental health professionals.

Three (16%) of the 19 study participants attended a form of critical incident stress debriefing (a meeting led by a mental health professional with the assistance of peer support personnel to decrease the psychological distress associated with the critical incident and normally held within 72 hours of a critical incident), while one participant attended a diffusing (a shortened version of a debriefing which is held within a few hours

following a critical incident to help reduce the intense reactions to the event). Comments from study participants included, “Yes. I think that’s an important piece [debriefing] that nurses don’t get that’s very important in emergency medicine. I think it’s something that should be offered.” Another nurse commented about not being offered the opportunity to attend a debriefing, “Afterwards we were talking about that and someone said yeah, I’m sure all the EMTs at that scene got two days off to be debriefed and whatever.”

Following the death of a 5-year old male a study participant stated, “We didn’t have a debriefing. Fire, police, everybody had a debriefing except for the nurses.”

Study participants who attended debriefings described their experiences as sharing their feelings, being told they were okay, and that their reactions were normal. As one study participant described:

Like she [the debriefing facilitator] talked to us about, ‘Okay, what you guys are feeling. It’s totally normal, absolutely.’ We were like, ‘Oh my God, we feel like an idiot.’ I guess I feel like an idiot. I’m here crying. This is not me. I don’t usually do this. But this is totally normal. I think they want to make sure that we were okay from an emotional standpoint as far as, you know thoughts of what we had. I’m not going to hurt myself or nothing like that. You just feel sad. She said, ‘It’s totally normal.’

Another study participant commented that she was encouraged to talk, relate to others, and that people cared, as she notes:

I think for most everybody there, it was relating it to your own [experience], at home I’ve got a kid this age or whatever. Somehow he [the facilitator] got people to open up and it worked and everybody felt much better and agreed that it was a

good thing that we had done it when it was done. And going to that debriefing was just so eye opening to see people that really did care and show their emotions. That helped a lot knowing that we really are all in this together...

The third participant who attended a debriefing described her experience in a similar way, feeling the loss of a postpartum woman and happy to have the opportunity to talk about it, "I was very glad that my charge nurse said look, 'We have somebody if you need to talk to somebody,' because I was totally blown away by it. I really was."

Standardizing the availability of debriefing procedures was also suggested by one study participant for emergency department nurses to consider:

I would like to see something a little more standardized...like this is how we handle, this is what happened...Kind of have something in place for that...maybe I'm wrong, but to my knowledge we don't have that. And have something more standard in place for those kinds of things and offer it and call the people and say listen, just remember this is available.

Study participants also found that informal support from co-workers, colleagues, and family helped them manage the aftermath of critical incidents. One nurse stated, "The most important thing is being able to, like, go to feelings and being comfortable enough with yourself to be able to talk to people, whether it's your peers or someone you don't know. Knowing when it's time to have to discuss it." Seventeen of the 19 nurses (89%) stated that they talked after the incident with coworkers.

In addition, 11 of the study participants (58%) discussed the critical incident with their significant others. Two of the significant others were employed in emergency services. This allowed the nurse to feel comfortable discussing the incident because the

significant other could identify with the issue as well as the terminology used. The remaining significant others provided support by listening. “I don’t want him to fix it and I don’t want him to comment on it...I just need to process verbally what I’m feeling.”

Of the thirteen (69%) of study participants who were married, nine (47%) mentioned the support from spouses who were available to discuss reactions to critical incidents. At times, the spouse did not really talk, but provided a supportive environment and just listened to the nurse. One participant stated, “I mean he’s not in medicine so he can’t relate to it...he just let me talk. That’s all he does.”

A study participant described her husband’s support when she came home after the death of a young woman:

He basically said, ‘You know, you did the best you could do. The whole team did the best they could do.’ My husband is very supportive of me in my job...he said to me, ‘You’d be crazy if you didn’t have feelings. Then there’d be something wrong.’

This response was similar to another participant’s description, “Then, when I got home, my husband, you know, as soon as he opened the door, he’s like, ‘Oh my God. What is the matter?’ I cried all night. He just stayed up with me. He’s great.” Although one husband would listen to his nurse wife, “he always tells me I need to put it away,” which could be construed as ending the conversation.

Some study participants chose not to share their *critical incident experiences* with their families.

Especially, your family—they love me and they’re great but I mean my kids, they don’t need to see their mother having this upset. And my husband would just be

like ‘Oh God, what do I do?’ And then I’d be worried about making them feel bad...

Another nurse also did not share the death of a 19-year old with her family, “I was upset. I didn’t tell anybody in my house that. I was quiet making supper and I was trying not to let them know that I had a really bad day.”

Not all study participants were able to have someone at home following a critical incident. “At the time I was living by myself. So, you know, just go home and be sad. I just talked to my dog about it.” Following the death of a police officer one study participant described her response to the critical incident, “I was exhausted. I cried. I went home and went to bed. I got up and I remember not doing anything the next day. I got out of bed and said no, I’m taking today off. The laundry can wait. I probably cooked dinner and that was about it.”

Strategies used by the participants included attending debriefings, a diffusing, talking with others about the incident, or performing routine daily activities at home. *Lasting effects* remained for many participants ($n = 13$, 68%) who still have vivid memories shared in interviews.

Lasting Effects. The subtheme *lasting effects* was used to describe items such as memories, triggers, and fears which persisted long after the critical incident itself was over. *Lasting effects* included (a) vivid memories of the sights and sounds associated with the critical incident, (b) triggers that precipitated memories, and (c) fear of returning to work. While participating in the interviews many of the nurses ($n = 13$, 68%) cried or had tears in their eyes. Many commented that they were surprised and thought they would be

able to talk about the incident while remaining objective. While being interviewed for the study a participant stated:

I'm kind of surprised at the level of emotion it brought up talking to you [the researcher] about it [the critical incident] because I have been able to discuss it [the critical incident] other times without [crying]...maybe because it's being more honest, because I know that's what you [the researcher] look for, really what happened. Not everybody really wants to hear everything that we [emergency nurses] do or see because they don't, really.

The study participants were able to vividly describe incidents that had occurred decades previously. Sixteen of the 19 participants commented on the length of time since the incident which ranged from a few months to 40 years. When asked if the memory was still clear, one participant responded that the memory was “unbelievably clear” when recalling a car accident 10 years previous involving a 6-year old girl, while another stated the memory was “vivid.”

Another participant responded, “That was 40 years ago and my brain can't remember a lot, but I can remember a lot about that night. Maybe, because it was never put away. It was never dealt with.”

“I distinctly remember everything clearly. That was 9½ years ago,” was the statement from an emergency nurse describing her first pediatric crisis with a 2½-year old boy and expressing her fear at the time of the incident that the child would die.

The vivid recollection of the incident was described to the researcher including details about the type of incident, age of the patient, the room in the emergency department, the time of day, sensory stimuli from the incident, and the family's reactions.

For example, a nurse describing the critical incident of the near drowning of a 4-year old child over 17 years ago stated, “I can still remember like it happened yesterday. I remember the room, the time of day. I remember it all.” Another nurse recalled a critical incident involving a 7-year old girl who was run over by a car, “I can still see her little face however many years later it was. It’s been at least 6 or 7 years since it happened.”

One nurse recalled a critical incident involving a baby who died of sudden infant death syndrome (SIDS) and etched in her mind was the mother’s reaction. “I’ve never heard screams like that. It was awful. She ran under the desk. She was screaming, screaming, screaming, screaming.” Another nurse described a mother’s reaction to the death of her child, “She just said, ‘my baby, my baby, my baby.’ That was all she said. She just kept over and over and over and over and over...just you know, the screaming was horrible. It was terrible. It was awful.”

Sights and sounds occurring during critical incidents were described by a number of study participants. When describing the sight of a 16-year old patient being wheeled into the emergency department, “What I remember is these white sneakers coming in through the door on that stretcher and they were doing CPR on this kid...his two white sneakers at the bottom of the stretcher. Sometimes I’m lying in bed and I see the two white sneakers, it’s the funniest thing, as I’m falling asleep.” Another nurse remembered the shoes also, “I saw her sneakers and I knew it was her.”

The faces of patients were also remembered, “But, just the fact that her little body was such in perfect shape except for the absolutely perfect tire track just right up the side of her face and just laying there just like an angel.” Or, “There wasn’t blood and guts everywhere. I remember saying he looks so perfect.” And lastly, “It was because I saw

the light go out of his eyes. It was like the eyes for me. It was the living and the dead eyes.”

Sights of family members were also discussed. A participant described the sight of the husband whose wife had died suddenly:

I can remember seeing her husband and him just kind of sitting there in total shock. He wanted to be in the room while everything was going on. I can remember looking over at him and just seeing him completely in shock.

The participants were unable to forget these incidents and frequently had triggers which brought back the memory of the critical incident. “The very first incident, Halloween night, 40 years ago. Every Halloween I remember it. I may not think of it any other time but every single Halloween, I remember that.” The trigger for another study participant was hearing a code called, “I think what happens sometimes when I hear that a code is coming in. It brings it back to me.” Another nurse remembered the death of a young girl, “I think of [her] when we go to the Dairy Queen [the last place they had seen her]. I think of it [her death] when I see little pink sneakers.” An additional trigger was described by another participant, “Plus the truck that he rammed into, it was like a tree service. You see that tree service in town and, you know, that makes you think of it.”

A study participant described what triggered memories of a 7-year-old girl’s death:

I wouldn’t say very often [that she thinks of it]. If something comes up like something terrible happened, you know, and people revisit their bad memories, that’s when. Or if a sick kid comes in, you know, we’ve had another sick child here that ended up you know, passing, that I wasn’t involved in. But you know all

the emotion and then everybody else is upset. All they're talking about is children who've died. I wouldn't say I think about it regularly but if something comes up, yeah. It's my go to sadness.

At times it is difficult to forget about a critical incident, especially when nurses do not find out what happened to a patient or the family of a patient who died. The nurses continue to think about the incident. As stated by one nurse, "But I think that unknown, of not knowing what happened is hard in this profession. We can't do anything." At times, the staff received information on families of patients, especially among those who lived in the same community. For example, families sent Christmas cards of children or pictures of loved ones and often they would see family members return to the emergency department with other injuries or an illness. For example one nurse had tenderly wrapped a child who had died of SIDS, personally carried the child to the morgue, and gave the child a goodbye kiss and said a prayer before she placed the child in a secure place in the morgue. Later, she was the person who answered the phone when the father called and a connection was made when she told him she had kissed his child. This family had a few emergency department visits since the incident and they always thank her for kissing their child. This nurse participant summed it up, "But it's just the most interesting thing that happened because when you think about crisis and tenderness and compassion come together, they met and compassion is what took the crisis away."

Summary

In summary, the themes that emerged from the interviews were: *critical incident experiences* and *aftermath*. Under the theme of critical incident experiences emerged three subthemes: *connection*, *workplace culture*, and *responses*, while the theme

aftermath had two subthemes: *strategies* and *lasting effects*. *Critical incident experiences* were reported by all study participants as occurring between one to fifteen times in their careers. *Connections* were personal and community-based. These *connections* created the scenario whereby an event became a critical incident for the study participant. The *connections* occurred when the patient was known to the nurse or reminded the nurse of themselves or their family. *Workplace culture* involved participants' perceptions of their expected behavior in the emergency department and emphasized the workplace culture influence on newer and experienced nurses. Participant *responses* to *critical incident experiences* were mostly physical and emotional and could occur before, during or after the critical incident. The majority of study participants cried in *response* to a critical incident, but expressed additional *responses*.

Few study participants were provided with formal support in terms of debriefings or diffusing when dealing with a critical incident. Study participants appeared to have their own informal debriefing *strategies* when critical incidents occurred such as talking (with co-workers, significant others) and going home. Critical incidents create *lasting effects* in the form of vivid memories that may be triggered by different stimuli. These results will be discussed further in Chapter V.

Chapter V

Discussion

The purpose of this study was to describe the experience of emergency nurses with critical incidents including identifying strategies used to manage these situations in the emergency department setting. The Lazarus and Folkman (1984) Theory of Stress, Appraisal, and Coping was used to guide this study. This chapter will discuss the findings related to the major theme of critical incident experiences, with subthemes of connections, workplace culture, responses, and the second major theme of aftermath with subthemes of strategies, and lasting effects. Implications for practice, policy, and research will be reviewed. Study limitations will be discussed along with a concluding summary.

Critical Incident Experiences

Critical incident experiences described by emergency nurse participants in this study did not fully reflect those events noted in previous studies. Similarities existed for critical incidents findings involving death and dying in children, adult patient deaths, and interactions with family members. A majority of the critical incidents in this study were also related to the subtheme of connections. In particular, a majority of participants had connections to the victim of the critical incident or the victim's family. Other studies described the following critical incidents: violence, multi-level trauma, suicide, verbal and physical abuse, or suffering (Adeb-Saeedi, 2002; Burns & Harm, 1993; Crabbe et al., 2004; Lam et al., 1999; Laposa et al., 2003; O'Connor & Jeavons, 2003) which were not identified in this study. Possible explanations for these differences may involve the nature of the community-based setting, including the possibility of knowing the patient or the patient's family. In addition, the multiple trauma, physical or verbal abuse, violence, and

suffering type events may be limited in this community setting. Study participants were asked to identify the one incident that stood out in their mind rather than identify all critical incidents they had experienced in their careers. Other studies asked emergency nurses to rate a list of critical incidents (Burns & Harm, 1993; O'Connor & Jeavons, 2003). Asking the participant about a single critical incident, rather than critical incident experiences in general, may have limited the types of critical incidents identified in this study and thus the findings. Study participants identified one to five critical incidents in their career. Comparisons to other findings about critical incident number of events could not be made as previous studies did not identify an average number of critical incidents in a nurse's career.

The study participants described 15 (51%) critical incidents that involved children. It is common for incidents that involve children to be the listed as the most stressful type of event (Burns & Harm, 1993; Lam et al., 1999; Laposa et al., 2003; O'Connor & Jeavons, 2003). In a study of 26 emergency nurses, 77% ($n = 20$) identified critical incidents with children as being the most difficult in their career (Burns & Harm, 1993). In addition, nurses may have children of their own who are of a similar age or gender to the critical incident victim. This personal connection adds to the stress of the critical incident (Haslam & Mallon, 2003).

One study (Burns & Harm, 1993) found anger as a common response during critical incidents that involve the death or injury of a child with the nurses blaming the parents or the physicians. The nurses in the present study had situations where they may have thought the parents responsible for a senseless death, but these nurses were very supportive of the physicians' efforts to save the children's lives. The nurses in this study

praised the physicians for their efforts to save children, even when unsuccessful. The community-based emergency department could perhaps allow closer relationships between nurses and physicians. In addition, the nurses in this study expressed a feeling of empathy for the physicians.

Many of the critical incidents described in this study were associated with the death of a patient. Certainly, emergency nurses are frequently exposed to dying patients and not all deaths are viewed as critical incidents. The connection with the patient or family was probably a determining factor in the study participants identifying these deaths as critical incidents. A study of nine emergency nurses supported that having a personal connection to the victim was a factor in a patient death becoming a critical incident (Beavan & Stephens, 1999). This finding is also supported in the literature when unusual circumstances are involved such as knowing the patient or family, a very traumatic or gory death, or again, the death of a child (Adeb-Saeedi, 2002; Appleton, 1994). However, very traumatic deaths were not mentioned by participants in this study.

Three previous studies found that family presence in the emergency department was viewed as a source of satisfaction, comfort, and support to the patient, while a source of stress for the emergency nurse (Adeb-Saeedi, 2002; Hawley, 1992; Helps, 1997). At times, the emergency nurse also cares for the family in addition to the victim (Beavan & Stephens, 1999). In this study, participants discussed difficulty in communicating with family members and felt ill-prepared for this task. The participants mentioned that this added to the stress of the critical incident. They stated that they had not received any formal education or practice with communicating bad news to family members either in school or on the job. This is supported by study findings of 54 emergency nurses where

only 33% ($n = 18$) felt they had been adequately prepared to meet the psychosocial needs of family members (Hallgrimsdottir, 2000). These same nurses (72%, $n = 39$) were distressed when communicating and comforting grieving families (Hallgrimsdottir, 2000). Other studies have not addressed the lack of communication skills in talking with families as a source of stress for nurses after a critical incident occurs.

Connections

Connections between the study participants and the critical incident were found in this study including knowing the patient, identifying with the patient, or caring for a patient who reminded them of themselves or their family. Findings by Burns and Rosenberg (2001) in their pilot study with six emergency nurses also included a personal meaning associated with a critical incident. The participants in this study worked in community hospitals which increased the chance of knowing the patients, caring for patients who were friends of their children, or finding a connection with the patient's family in a number of critical incidents. The nurse participants empathized with mothers who had lost their children or the spouse of a lost loved one. A similar finding appears in a study of 51 emergency nurses who found caring for someone who resembles the nurse or a family member was described as a critical incident (Laposa et al., 2003).

Workplace Culture

The study participants described the presence of a workplace culture that influenced their responses to stressful events in the emergency department. Workplace culture influenced how nurses were expected to behave during very stressful and difficult situations. Only one study could be found that discussed workplace culture experienced by nurses and none for emergency department nurses in the US. This study was done

with neonatal nurses ($N = 27$) and found the importance of teamwork within a department along with the clarification of values and beliefs, but did not address emergency or critical incident situations (Wilson, McCormack, & Ives, 2005). It is important for physicians, nurses, emergency personnel, and managers to all support each other, working as a team, and recognizing communication problems, because poor interpersonal relationships are a main source of stress related to critical incidents (Hawley, 1992; Helps, 1997; Laposa et al., 2003). Problems with interpersonal relationships were not identified as negative workplace issues in this study.

The majority of participants in this study felt supported by colleagues and management when faced with a critical incident. This differs from a previous study of emergency nurses working in a large urban center hospital which found that 67% ($n = 34$) did not feel supported by administration in the workplace (Laposa et al., 2003). Although the participants in this study felt supported, the support was mainly informal and came from peers and did not include formal policies or procedures initiated by administration when critical incidents occurred. A previous study of critical incident experiences recognized that nurses felt supported when management provided social support through encouragement, workshop, or debriefings to buffer the impact of stressful effects (Laposa et al., 2003).

A lack of education during orientation or prior education about critical incidents and critical incident stress management may contribute to this workplace culture for emergency department nurses. Without education about typical or expected responses to critical incidents, emergency nurses may fear expressing emotion in front of co-workers or sharing responses to the critical incidents. Education concerning critical incidents

would describe expected responses to critical incidents including “fight or flight” response, poor concentration, sleep disturbances, and loss of emotional control (Mitchell & Everly, 2001).

Participants were also concerned about their ability to function in a professional, expert manner during critical incidents. This was especially evident in nurses who were less experienced members of the staff. A previous study supported these findings in which two thirds ($n = 33$) of the nurses described critical incidents occurring early in their careers (Appleton, 1994). Some study participants described critical incidents experienced at the start of their emergency department careers, while newly employed emergency nurses identified lack of experience in emergency events.

Inadequate staffing was not identified as a problem by these study participants. However, it has been discussed as a source of significant workplace stress in previous research studies where it contributed to the stress from critical incidents (Adeb-Saeedi, 2002; Burns et al., 1983; Eager, 2003; Hawley, 1992; Helps, 1997). The participants in this study had adequate staffing to care for the critical incident victims, but not enough staffing to allow study participants involved in the critical incidents time to process their reactions to the critical incidents. Previous study findings of misuse of the emergency department by semi-urgent patients, repeatedly seen patients (Hawley, 1992; Schriver et al., 2003), or delays in discharging patients (Eager, 2003) were also not mentioned as contributing factors to critical incident experiences found in this study.

The subtheme of responses to critical incident experiences emerged and included physical and emotional responses. The majority of participants responded by crying, but also reported physical symptoms of shaking, adrenaline rush, and sleep difficulties.

Similar responses were found in other studies. A frequent complaint following a critical incident was fatigue (Appleton, 1994; Hall, 2004; Laws, 2001) which was mentioned by the nurses in this sample. A large percentage (no *n* reported) of 50 nurses had insomnia following a critical incident while a smaller percentage (no *n* reported) had complaints of headaches, diarrhea, nausea, crying, nervousness, decreased concentration, and agitation (Appleton, 1994). The use of gallows humor (humor in a serious situation) in response to critical incident experiences was not mentioned by study participants, although found in another study (Scott, 2007).

Aftermath

The second major theme, aftermath, revealed a finding that nurses desired, but lacked formal debriefing or diffusing following a critical incident. Thus, nurses described the use of informal strategies such as family support, co-worker support, or involving themselves in routine daily activities like cooking or cleaning. A study of 52 emergency nurses found that the healthcare provider, while feeling compassion for the victim or the incident, may also experience memories from their past (Jonsson & Segesten, 2003). Study participants found that the aftermath of most experiences usually was short term lasting less than a week. Findings did suggest that additional difficulties or distress from the aftermath may create more lasting effects for emergency nurse participants.

Lasting Effects

The subtheme of lasting effects included vivid memories of critical incidents that occurred many years ago. Study participants gave detailed descriptions of their experiences with the critical incident, expressed surprise that they could still become emotional after many years, and shared recollections of sights and sounds associated with

critical incidents. The visual images were reported in two other studies with emergency department nurses (Burns & Rosenberg, 2001; Moszcynski & Haney, 2002). Similarly, in a descriptive study, Laws (2001) found that 48% ($n = 15$) of this sample reported having recurring visual images and 55% ($n = 17$) reported recurring dreams. Study participants also remembered sounds associated with cardiopulmonary resuscitation (Laws, 2001). None of the participants in this study described any smells or tactile experiences associated with critical incidents, but could describe in detail sights and sound associated with critical incident experiences.

A lasting effect can be associated with not knowing what happened to those involved in the critical incident. This lack of information is not addressed in other studies and is definitely affected by the Health Insurance Portability and Accountability Act (HIPAA) (Department of Health and Human Services, 2003) which prevents nurses from seeking information on patients who were transferred out of the emergency department. Certainly, distressed family members cannot be expected to relay information about a patient's status, but a method to receive follow-up on what happened without violating patient privacy would be helpful to emergency nurses in decreasing the unknown outcome.

Strategies

The lack of formal strategies such as debriefings and diffusings for nurses in this study may influence the lasting effects experienced. Nurse participants in this study identified informal support strategies such as talking with co-workers, spouses, or friends who were nurses. A study of 173 emergency nurses indicated that 49% ($n = 85$) of this sample found talking with peers following critical incidents was one of the best methods

of mitigating the effects of critical incident stress (Eager, 2003). In many ways these informal support strategies mimicked the procedures found in peer debriefings, but may not provide the needed resources or follow-up including the involvement of mental health professionals. A study of emergency nurses found that only 32% ($n = 218$) of the nurses were offered debriefings following a critical incident (Burns & Harm, 1993), whereas in this study 16% ($n = 3$) of the nurses were offered debriefings. Meta-analysis of studies on critical incident stress debriefing found implications for the use of debriefings, not as standalone practice, but as part of critical incident stress management (CISM) (Mitchell, Sakraida, & Kameg, 2003). CISM includes pre-incident training and follow-up services in addition to debriefing and defusing (Mitchell & Everly, 2001). Most of the study participants stated they would consider participating in formal debriefings if offered which they believed would be helpful following a critical incident.

Theoretical Framework

The usefulness of the Lazarus and Folkman theoretical framework of stress, appraisal, and coping in guiding the interview questions for this study of this qualitative study was limited. The study participants did not appraise a critical incident as a threat or harm but did appraise the critical incident as a challenge. A workplace culture was described instead of a workplace environment as a significant finding in this study. The workplace environment in other studies was described as contributing to stress for nurses with lack of staffing, poor communication or interpersonal relationship, and verbal and physical abuse. Participants in this study described the expected behavior in response to a critical incident as the workplace culture. Study participants described critical incident experiences by connections to themselves, their families, or community similar to the

meaning mediator suggested in the Lazarus and Folkman theoretical framework. The participants also experienced short term symptoms in response to the critical incidents. Despite a lack of formal strategies within this study, nurses reported a decrease in intensity of stress symptoms after attending debriefings. Perhaps these findings would help to inform an emerging theoretical framework for future study in this area.

Study Limitations

Study limitations included the types of critical incident experiences, homogeneous female sample, community-based study setting, and participant self-selection. The types of critical incidents experienced by the participants' were not representative or as comprehensive as critical incidents identified in other studies (Appleton, 1994; Burns & Harm, 1993; O'Connor & Jeavons, 2003). The study was conducted exclusively in two community-based emergency settings, which limits the type of critical incident exposures possible. The sample was restricted to women and Caucasian race. Therefore, results are not applicable to men or other racial/ethnic groups. The number of critical incident experiences was low (up to 5). Thus, limited number of critical incidents (1-5), and small sample size limits transferability to a larger population of emergency nurses with greater critical incidence experiences. Nurses also self-selected to participate in this study. Nurses with difficulty in dealing with critical incidents may have chosen not to participate in the study. Former nurses who left the profession, due to a critical incident, were not included in the sample. These nurses may experience more lasting effects from their critical incident exposure. Therefore, these results are limited to emergency nurses working in community-based facilities who have had limited critical incident exposures.

Implications for Practice

Practice implications include preparing emergency nurses for critical incidents. Programs on critical incident stress management should be included in orientation to the emergency department, as well as during yearly competency sessions (Emergency Nurses Association, 2002). Pre-incident training may also prepare nurses for critical incident experiences through identification of usual responses, effective strategies, and available resources. Practice simulation experiences of critical incident examples such as code situations, dealing with family members, or death of a child may benefit emergency nurses to reduce potential critical incident stress risks.

Implications for Policy

Policy implications include: (a) developing clear guidelines related to critical incidents, which may include offering defusing, debriefing, or access to individual meetings with a mental health professional, (b) allowing nurses time following a critical incident to process their reaction to the critical incident, (c) assessing the well-being of nurses who have experienced a critical incident at several key time points and (d) providing senior nurse mentors to assist new nurses when experiencing their first critical incidents. Working in collaboration with management, co-workers, and experts in critical incident stress management to develop and implement such policies in the emergency department setting may improve the working environment for nurses (Emergency Nurses Association, 2002).

Implications for Research

Implications for future research include studying critical incident experiences among male and minority nurses, those who work in large urban city trauma centers, and

possibly those nurses who have left nursing due to a critical incident experience. Further exploration of how emergency nurses in the US appraise events identified as critical incidents, including whether critical incident stress develops, is still needed. Targeting emergency nurses who have experienced multiple critical incidents, as described in previous studies, or critical incident stress could add some additional knowledge or perspectives. In addition, theoretical frameworks that guide this type of research need to be explored. Finally, intervention research is needed that examines the effect of formal debriefings or informal strategies mentioned by participants on the development of lasting effects related to critical incidents.

Summary

Results of this study described emergency nurses' experiences with critical incidents in community-based emergency departments. Two major themes of critical incident experiences and aftermath emerged from the data along with the subthemes of connections, workplace culture, responses, strategies, and lasting effects. The study supported the previous finding of the importance of a connection to the event when defining a critical incident. However, many of the critical incidents identified in previous studies were not described by these study participants. Findings suggested areas for further research on defining and describing critical incidents which include emergency nurses in large urban emergency department settings. In addition, studies need to consider inclusion of male and minority participants, the workplace culture, and informal strategies suggested by the participants. Practice, policy, and research implications should address future educational preparation and support of emergency nurses dealing with critical incidents within the emergency workplace. Strategies to prevent distress and

enhance coping in the aftermath of a critical incident are important to future nursing practice and care in the emergency department setting. Continued vigilance will be required for ongoing study of this important nursing practice area particularly as the ever changing demands of health care and society influence critical incidents experienced in the emergency department.

References

- Adeb-Saeedi, J. (2002). Stress amongst emergency nurses. *Australian Emergency Nursing Journal*, 5(2), 19-24.
- Allen, J. J. (1999). *Intensive care nurses: Posttraumatic stress disorder-like symptomatology*. Unpublished doctoral dissertation, Loma Linda University, Loma Linda.
- American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorder* (4th ed.). Washington D.C.: American Psychiatric Association.
- Antai-Ontong, D. (2002). Overwhelming stressful events: Proactive response key to coping. *American Nurse*, 34(1), 9.
- Appleton, L. (1994). What's a critical incident? *Canadian Nurse*, 90(8), 23-26.
- Beavan, V., & Stephens, C. (1999). The characteristics of traumatic events experienced by nurses on the accident and emergency ward. *Nursing Praxis in New Zealand*, 14(1), 12-21.
- Birchenall, P. D., & Parrish, A. A. (2003). It is important that managers target stress in the workplace. *British Journal of Nursing*, 12(21), 1241-1241.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20-28.

- Browning, L., & Greenberg, M. (2003). Cross-sectional survey of burnout in emergency and nonemergency nurses. *Journal of Emergency Nursing*, 29(5), 408-408.
- Burns, C., & Harm, N. J. (1993). Emergency nurses' perceptions of critical incidents and stress debriefing. *Journal of Emergency Nursing*, 19(5), 431-436.
- Burns, C., & Rosenberg, L. (2001). Redefining critical incidents: A preliminary report. *International Journal of Emergency Mental Health*, 3(1), 17-24.
- Burns, H. K., Kirilloff, L. H., & Close, J. M. (1983). Sources of stress and satisfaction in emergency nursing. *Journal of Emergency Nursing*, 9(6), 329-336.
- Caine, R., & Ter-Bagdasarian, L. (2003). Early identification and management of critical incident stress. *Critical Care Nurse*, 23(1), 59-65.
- Ceslowitz, S. B. (1989). Burnout and coping strategies among hospital staff nurses. *Journal of Advanced Nursing*, 14(7), 553-558.
- Chang, E. M., Daly, J., Hancock, K. M., Bidewell, J. W., Johnson, A., Lambert, V. A., et al. (2006). The relationships among workplace stressors, coping methods, demographic characteristics, and health in Australian nurses. *Journal of Professional Nursing*, 22(1), 30-38.
- Cox, M. (2004). *The psychological stresses experienced by emergency department nurses*. Unpublished doctoral dissertation, Walden University.

Crabbe, J. M., Bowley, D. M., Boffard, K. D., Alexander, D. A., & Klein, S. (2004). Are health professionals getting caught in the crossfire? The personal implications of caring for trauma victims. *Emergency Medicine Journal*, 21(5), 568-572.

Cronin, G., & Cronin, C. (2006). Why does A&E attract newly qualified registered nurses? *Accident and Emergency Nursing*, 14(2), 71-77.

Department of Health and Human Services. (2003). *Summary of the HIPAA privacy rule*.

Retrieved April 30, 2009, from

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/privacysummary.pdf>

Eager, S. C. (2003). *Emergency nurses stress support and burnout*. Unpublished Master of Science (Honours) thesis, University of Western Sydney, Sydney.

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-115.

Emergency Nurses Association. (2002). *Emergency nurses position statement: Stress management strategies* Retrieved April 29, 2009, from

http://www.ena.org/about/position/position/Stress_Management_Strategies_-_ENA_PS.pdf

Emergency Nurses Association. (2006). *Emergency Nurses Association position statement: Violence in the emergency care setting*. Retrieved April 18, 2009, from

<http://www.ena.org/government/Advocacy/Violence/PositionStatement.pdf>

- Erickson, L., & Williams-Evans, S. A. (2000). Attitudes of emergency nurses regarding patient assaults. *Journal of Emergency Nursing*, 26(3), 210-215.
- Fullerton, C. S., McCarroll, J. E., Ursano, R. J., & Wright, K. M. (1992). Psychological responses of rescue workers: Firefighters and trauma. *American Journal of Orthopsychiatry*, 62(3), 371-378.
- Gallo, K., Dumas, M. A., & Shurpin, K. (1996). Search and research. Qualitative research: the search for meaning. *Journal of the American Academy of Nurse Practitioners*, 8(4), 167-173.
- Gillespie, B. M., & Kermode, S. (2003). How do perioperative nurses cope with stress? *Contemporary Nurse: A Journal for the Australian Nursing Profession*, 16(1-2), 20-29.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112.
- Hall, D. S. (2004). Work-related stress of registered nurses in a hospital setting. *Journal For Nurses In Staff Development*, 20(1), 6-16.
- Hallgrimsdottir, E. M. (2000). Accident and emergency nurses' perceptions and experiences of caring for families. *Journal of Clinical Nursing*, 9(4), 611-619.
- Haslam, C., & Mallon, K. (2003). Research note: a preliminary investigation of post-traumatic stress symptoms among firefighters. *Work & Stress*, 17(3), 277-285.

- Hawley, M. P. (1992). Sources of stress for emergency nurses in four urban Canadian emergency departments. *Journal Of Emergency Nursing*, 18(3), 211-216.
- Hays, M. A., All, A. C., Mannahan, C., Cuaderes, E., & Wallace, D. (2006). Reported stressors and ways of coping utilized by intensive care unit nurses. *Dimensions of Critical Care Nursing*, 25(4), 185-193.
- Healy, C., & McKay, M. (1999). Identifying sources of stress and job satisfaction in the nursing environment. *Australian Journal of Advanced Nursing*, 17(2), 30-35.
- Helps, S. (1997). Experiences of stress in accident and emergency nurses. *Accident and Emergency Nursing*, 5(1), 48-53.
- Hsieh, H., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Hudson, S. (1995). New responses to stress and trauma. *Australian Nursing Journal*, 2(10), 13.
- Jonsson, A., & Segesten, K. (2003). The meaning of traumatic events as described by nurses in ambulance service. *Accident and Emergency Nursing*, 11(3), 141-152.
- Jonsson, A., & Segesten, K. (2004). Daily stress and concept of self in Swedish ambulance personnel. *Prehospital & Disaster Medicine*, 19(3), 226-234.
- Kalia, M. (2002). Assessing the economic impact of stress--the modern day hidden epidemic. *Metabolism: Clinical And Experimental*, 51(6 Suppl 1), 49-53.

- Kimball, B., & O'Neil, E. (2002). *Health care's human crisis: The American nursing shortage*. Retrieved April 18, 2009, from <http://www.rwjf.org/files/newsroom/NursingReport.pdf>
- Lam, L. T., Ross, F. I., Cass, D. T., Quine, S., & Lazarus, R. (1999). The impact of work related trauma on the psychological health of nursing staff: A cross sectional study. *Australian Journal of Advanced Nursing*, 16(3), 14-20.
- Lambert, V. A., Lambert, C. E., & Yamase, H. (2003). Psychological hardiness, workplace stress and related stress reduction strategies. *Nursing & Health Sciences*, 5(2), 181-184.
- Laposa, J. M., & Alden, L. E. (2003). Posttraumatic stress disorder in the emergency room: exploration of a cognitive model. *Behaviour Research & Therapy*, 41(1), 49-65.
- Laposa, J. M., Alden, L. E., & Fullerton, L. M. (2003). Work stress and posttraumatic stress disorder in ED nurses/personnel. *Journal of Emergency Nursing*, 29(1), 23-28, 87-92.
- Laws, T. (2001). Examining critical care nurses' critical incident stress after in hospital cardiopulmonary resuscitation (CPR). *Australian Critical Care*, 14(2), 76-81.
- Laws, T., & Hawkins, C. (1995). Critical incident stress: a normal response to an abnormal situation. *Australian Nursing Journal*, 2(7), 32-34.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.

- Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer Publishing Company.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Lewis, G. (1994). *Critical incident stress and trauma in the workplace*. Bristol, PA: Accelerated Development Inc.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.
- Maxwell, W. (2003). The use of gallows humor and dark humor during crisis situations. *International Journal of Emergency Mental Health*, 5(2), 93-98.
- McCaig, L. F., & Nawar, E. N. (2006). National hospital ambulatory medical care survey: 2004 emergency department summary. Atlanta, GA: National Center for Health Statistics, Centers for Disease Control.
- McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing*, 44(6), 633-642.
- Mitchell, A. M., Sakraida, T. J., & Kameg, K. (2003). Critical incident stress debriefing: implications for best practice. *Disaster Management & Response*, 1(2), 46-51.
- Mitchell, J. T. (1983). When disaster strikes...the critical incident stress debriefing process. *JEMS: A Journal Of Emergency Medical Services*, 8(1), 36-39.

- Mitchell, J. T. (1984). *Effects of stress management training on paramedic coping styles and perceived stress levels*. Unpublished doctoral dissertation, University of Maryland, Baltimore.
- Mitchell, J. T. (2004). *Crisis intervention and critical incident stress management: A defense of the field*. Retrieved April 18, 2009, from http://www.icisf.org/articles/Acrobat%20Documents/CISM_Defense_of_Field.pdf
- Mitchell, J. T., & Everly, G. S. (2001). *Critical incident stress debriefing: An operations manual for CISD, defusing and other group crisis intervention services* (3rd ed.). Ellicott City, MD: Chevron Publishing Corporation.
- Moran, C., & Massam, M. (1997). An evaluation of humour in emergency work. *Australasian Journal of Disaster and Trauma Studies*, 1(3), No pagination specified.
- Morse, J. M., Denzin, N. K., & Lincoln, Y. S. (1994). Designing funded qualitative research. In *Handbook of qualitative research*. (pp. 220-235). Thousand Oaks, CA: Sage Publications, Inc.
- Moszcynski, A. B., & Haney, C. J. (2002). Stress and coping of Canadian rural nurses caring for trauma patients who are transferred out. *Journal of Emergency Nursing*, 28(6), 496-504.

- National Institute for Occupational Safety and Health. (2002). *Violence: Occupational hazards in hospitals*. Retrieved April 18, 2009, from <http://www.cdc.gov/niosh/docs/2002-101/>
- O'Connor, J., & Jeavons, S. (2003). Nurses' perceptions of critical incidents. *Journal of Advanced Nursing*, 41(1), 53-62.
- Olofsson, B., Bengtsson, C., & Brink, E. (2003). Absence of response: A study of nurses' experience of stress in the workplace. *Journal of Nursing Management*, 11(5), 351-358.
- Ootim, B. (2001). Social support. *Nursing Management - UK*, 7(9), 22-24.
- Oster, N. S., & Doyle, C. J. (2000). Critical incident stress and challenges for the emergency workplace. *Emergency Medicine Clinics Of North America*, 18(2), 339-353.
- Polit, D. F., & Beck, C. T. (2007). *Nursing research generating and assessing evidence for nursing* (8th ed.). Philadelphia: Lippincott, Williams, & Wilkins.
- Rea, R. (2005). So! Emergency nurses are unique. *Australasian Emergency Nursing Journal*, 8(3), 110-111.
- Regehr, C. (2001). Crisis debriefing groups for emergency responders: Reviewing the evidence. *Brief Treatment and Crisis Intervention*, 1(2), 87-100.

- Regehr, C., & Bober, T. (2005). *In the line of fire: Trauma in the emergency services*. New York: Oxford University Press.
- Regehr, C., Hill, J., & Glancy, G. D. (2000). Individual predictors of traumatic reactions in firefighters. *The Journal Of Nervous And Mental Disease*, 188(6), 333-339.
- Richards, H. M., & Schwartz, L. J. (2002). Ethics of qualitative research: Are there special issues for health services research? *Family Practice*, 19(2), 135-139.
- Sandelowski, M. (1995). Focus on qualitative methods. Qualitative analysis: What it is and how to begin. *Research in Nursing & Health*, 18(4), 371-375.
- Sandelowski, M. (1999). Focus on qualitative methods. Time and qualitative research. *Research in Nursing & Health*, 22(1), 79-87.
- Sandelowski, M. (2000). Focus on research methods. Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334-340.
- Schrivver, J. A., Talmadge, R., Chuong, R., & Hedges, J. R. (2003). Emergency nursing: historical, current, and future roles. *Academic Emergency Medicine*, 10(7), 798-804.
- Scott, T. (2007). Expression of humour by emergency personnel involved in sudden deathwork. *Mortality*, 12(4), 350-364.
- Selye, H. (1984). *The Stress of Life*. New York: The McGraw-Hill Companies, Inc.

- Smith, S. (2006). Encouraging the use of reflexivity in the writing up of qualitative research. *International Journal of Therapy & Rehabilitation*, 13(5), 209-215.
- Taormina, R. J., & Law, C. (2000). Approaches to preventing burnout: The effects of personal stress management and organizational socialization. *Journal of Nursing Management*, 8(2), 89-99.
- van der Ploeg, E., & Kleber, R. J. (2003). Acute and chronic job stressors among ambulance personnel: Predictors of health symptoms. *Occupational & Environmental Medicine*, 60(Supplement 1), i40-i46.
- Wheeler, H. H. (1997). Nurse occupational stress. A review of nurse occupational stress research. *British Journal of Nursing* 6(11), 642-645.
- Wilson, V. J., McCormack, B. G., & Ives, G. (2005). Understanding the workplace culture of a special care nursery. *Journal of Advanced Nursing*, 50(1), 27-38.
- Wolf, Z. R. (2003). Exploring the audit trail for qualitative investigations. *Nurse Educator*, 28(4), 175-178.

Appendices

Appendix A. Interview Guide

Appendix B Demographic Data

Appendix A. Interview Guide

Theoretical framework	Questions	Probes
Causal antecedent <ul style="list-style-type: none"> • Critical incident • Workplace environment 	Describe a critical incident experience(s) that you had.	What was the incident(s)? What was it like for you? Tell me more about that. Do you remember the workplace environment at the time?
Mediating processes	Can you explain the meaning this critical incident had for you?	Did you consider this situation may have been threatening in some way? Did you consider this situation may have harmed you personally or professionally? Did you consider this situation challenging?
Immediate and long term effects	Describe your reactions to a critical incident.	Did you develop any immediate or long term symptoms of stress?
	What strategies do you use to manage critical incidents?	Tell me who you talk to after a critical incident. Where do you get support when a critical incident occurs? What information were you provided about critical incidents or critical incident stress and by whom? Was this information helpful or not helpful and why? Did you ever participate in a debriefing provided by your employer? Have you considered changing jobs because of effects of critical incidents?

Appendix B. Demographic Data

Age	
Gender	Male
	Female
Marital status	Single
	Widowed
	Divorces
	Separated
	Steady relationship
	Living together
	Married/life partner
Ethnicity	African American
	Asian
	Hispanic
	Native American
	Caucasian
Religious affiliation	Catholic
	Protestant
	Eastern Orthodox
	Jewish
	Muslim
	Eastern religions
	No religious affiliation
Number of years as nurse	
Number of years in emergency department	
Entry level education or first nursing program	LPN/LVN
	Diploma
	Associate degree
	Baccalaureate degree
	Nurse practitioner
Highest level of education achieved	Associate degree
	Baccalaureate degree
	Master's degree
	Doctorate
Number of hours worked per week	
Shift worked	Day
	Evening
	Night
	Rotating
Usual length of shift	Less than 8 hours
	8 hours

	12 hours
	16 hours
Number of yearly patient visits in emergency department	
Trauma level of your facility	Level I trauma center
	Level II trauma center
	Level III trauma center
	Level IV trauma center
	No rating or unknown
How would you rate your life outside of work?	Not at all stressful
	Mildly stressful
	Moderately stressful
	Very stressful
	Extremely stressful
How would you rate your health?	Excellent
	Good
	Fair
	Poor
Are you a member of the Emergency Nurses Association?	Yes
	No
Are you a certified emergency nurse (CEN)?	Yes
	No
Are you certified in ACLS?	Yes
	No
Are you certified in PALS or ENPC?	Yes
	No
Are you certified in TNCC?	Yes
	No
Training in CISM	Yes
	No
Approximate number of critical incidents in career	