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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

STUDENT NURSES WHO WITNESS CRITICAL  
EVENTS IN THE CLINICAL SETTING:  
A GROUNDED THEORY  
QUALITATIVE STUDY

A Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

Tiffany Lee Hood

College of Natural and Health Sciences  
School of Nursing  
Nursing Education

August 2020

This Dissertation by: Tiffany Lee Hood

Entitled: *Student Nurses Who Witness Critical Events in the Clinical Setting: A Grounded Theory Qualitative Study*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in the College of Natural and Health Sciences in the Department of Nursing.

Accepted by the Doctoral Committee

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Accepted by the Graduate School

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## ABSTRACT

Hood, Tiffany Lee. *Student Nurses Who Witness Critical Events in the Clinical Setting: A Grounded Theory Qualitative Study*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2020.

Background: Nursing students often experience critical events in the clinical setting, and too often, the clinical instructor does not have the training to help students through these situations. The literature shows that students often feel alone and abandoned, requiring them to endure these experiences without proper psychological recovery. Clinical nurse educators and staff nurses may not fully understand their role in emotional support, pre-briefing, and debriefing, not knowing what to do to help students through such difficult situations.

Procedure: A grounded theory qualitative study was conducted to better understand the experiences of student nurses who have witnessed critical events in the clinical setting, and to better understand the types of support provided and the effectiveness of the support. Fourteen undergraduate student nurses from three four-year universities in Utah, United States, participated in this study.

Results: Using a four-stage coding procedure, 50 initial categories were categorized into one core category, nine primary categories, and nine secondary categories. Relationships between categories were identified, and a theory of student nurse support and recovery through critical events in the clinical setting emerged.

Conclusion: Student nurses need active faculty and/or staff support during critical events, and pre-briefing whenever possible. Students should be taught coping skills and have risk and support systems assessed prior to entering the clinical setting. Nursing knowledge, life experiences, values, beliefs, coping skills, current mental health state, and prior history of trauma affect student responses to critical events. Immediate debrief positively affects post-event stress response and coping by providing the opportunity for students to gain closure, decrease anxiety, increase understanding, time to mentally process the event, and emotional support. Lack of debrief increases post-event psychological distress and decrease coping and resilience. Support after critical events should continue in the days, weeks, and months following the event. Students should be monitored for signs of increased psychological distress and psychological trauma and be provided resources for help in coping. Students who do not receive adequate support prior to, during, or after a critical event are at risk for psychological trauma.

## ACKNOWLEDGEMENTS

I am overwhelmed with emotion as I think about the students who were willing to be vulnerable and share their experiences with me. It was a privilege to be trusted with their personal, emotional trials, and such a special opportunity to help be a part of their healing. I truly believe that talking about traumatic events helps ease the trauma, and that as we reach out, we find others who understand, can empathize, and can help support. Our challenges are unique, and one is not to be deemed “less” than another. As one participant so eloquently stated during an interview: “Whether we drown in a bathtub of water or an ocean, we still drown.”

This experience was eye-opening and sacred. Although I knew that this study could be emotional for me and my participants, I really didn’t understand what that meant until I heard story after story of trauma, emotional distress, fear, anxiety, sadness, discomfort, and helplessness. Hearing the stories on audio again, and typing, editing, and analyzing interviews was an overwhelming process, and the importance of this topic grew with each interview I immersed myself in. I first want to thank the participants in this study. Thank you for providing a wealth of information that can be used in future studies and nursing education practice to help better the experiences of future students. My hope is that this study helps educators gain tools to help better prepare students for critical events, and help support students before, during, and after critical events, to help ease the emotional burden and prevent psychological trauma.

I want to thank my husband and my children for their encouragement and their understanding through this journey. Eddy, you have always supported me in my dreams and encouraged me to make them happen. I could not have done this without you. Thank you for offering me time to study, for being my therapist, and for being a shoulder to cry on when things got hard. It's a lot to ask someone to support you through six years of graduate school with four young children and you did without hesitation. I love you. Thank you to my children who inspire me. I learn from you each day. I love you more than you'll ever know, and I want the world for you. I hope that my educational journey helps inspire you to get a college education and to reach for your dreams. You have the potential to be whatever you want to be if you work for it.

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the other nurses on the unit. I loved being the “go-to” nurse. Thank you. I have so many wonderful memories from my support role, and I loved every second of it.

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## **CHAPTER I**

### **INTRODUCTION**

The nervous excitement from students entering the clinical setting is often palpable to the clinical instructor. Students often enter the clinical setting intent on learning how to care for a wide range of conditions, interacting with healthcare staff, and applying didactic content to practice. Though the clinical learning environment is often stressful, the opportunities for hands-on learning are difficult to replicate. Every clinical rotation is different. During their time in nursing school, students will enter a variety of clinical settings, such as long-term care centers, community health centers, and an exciting array of hospital environments such as medical-surgical units, intensive care units (ICU's), emergency departments (ED's), mental health units, and specialty units such as cardiology, neuro-trauma, ortho-rehab, labor and delivery, oncology, operating room (OR), and pediatrics. What students may not always anticipate, however, is the mental and emotional impact that comes from caring for the ill.

Even beyond the expected, and often discussed stressors related to clinical education, are the events that are highly emotionally distressing or traumatic to students who witness them or are directly involved. Events such as caring for victims of trauma or abuse, patient death, withdrawal of care, the traumatic delivery of a baby, resuscitation, and patient violence can be difficult for students. Not all students will experience these types events during their nursing education, but for those who do, the event can have lasting effects. These events vary in severity, can occur in nearly every clinical setting,

and too often nursing students are not mentally or emotionally prepared for these types of events and do not have the coping skills necessary to handle them (Gerow et al., 2010; Parry, 2011).

According to Foli and Thompson (2019), nurses are at high risk for, and vulnerable to experiencing compassion fatigue, secondary trauma, and other forms of psychological distress. If individuals are not able to cope with what they witness, critical events can lead to psychological trauma, including post-traumatic stress disorder and crisis (Foli & Thompson, 2019). Avoidance coping has been shown in the literature to be maladaptive and is associated with psychological distress, demonstrating that those who experience trauma need effective coping measures during the post-event period (Littleton, Horsley, John, & Nelson, 2007). Though there is a clear understanding that healthcare personnel require mental and emotional support throughout their careers, little is being done to address these same needs in students, who often witness critical events in the clinical setting while training to become healthcare personnel. According to Dwyer and Revell (2015), “pedagogies being used to teach and prepare students for these challenges is lacking” (p. 10). There is a scarcity of studies in the literature on student nurses and coping strategies related to clinical training (Labrague, McEnroe-Petitte, Al Amri, Fronda, & Obeidat, 2018).

Students in higher education, in general, are already vulnerable to developing mental illness. “Three quarters of those with a mental illness first have symptoms before their mid-20s. The peak of onset for most disorders is between the ages of 18-25. Over 80 percent of full-time undergraduates fall into this age range” (Brown, 2016, p. 10). This study was inspired by the inadequacy of clinical nurse educator training on student



debriefing and psychological support (Heise & Gilpin, 2016), and the inadequacy and sometimes inaccuracy of curricular content in schools of nursing on coping, resilience, and student mental health (Holman, Perisho, Edwards, & Mlakar, 2010; Jenkins & Germaine, 2018). This chapter discusses the following: 1) background, 2) statement of the problem, 3) purpose of the study, 4) significance of the study, 5) research questions, 6) methodology and theoretical framework, 7) definition of terms, and 8) delimitations and limitations.

### **Background**

Not long after I became a clinical nurse educator, a student of mine came to post-clinical conference visibly distraught. He told us that during his clinical experience in the Intensive Care Unit (ICU) his patient had passed away unexpectedly, and he witnessed the event alone. I was taken back. He had not told me of the event during clinical and did not give me the chance to help support him through the event. This was not the last time something like this happened. Students of mine have had a difficult time emotionally recovering after witnessing resuscitation of trauma patients in the emergency department, caring for physically abused patients, and witnessing the overwhelming psycho-social elements of caring for intensive care patients. The experiences of my students shaped their career choices. One student who was interested in intensive care nursing prior to the event chose to work outside of critical care in a unit where patients were always stable and the risk for critical events was minimal, and another student worked clinically for a couple of years and then chose to no longer work as a nurse. The experiences also made subsequent clinical days more difficult for them. The students were hesitant to resume

patient care and were wary of going back to the same clinical unit where the event occurred.

### **Statement of the Problem**

An abundance of nursing literature supports the high incidence of stress among nursing students, and most students enter nursing education with the understanding that stress is an expected part of their education. Stress comes from many elements of nursing education: studying large amounts of detailed critical information, written and practical examinations, simulation experiences, written assignments, and the general understanding that knowledge leads to safe patient care, for example. Of all the experiences that a student nurse will encounter, it is evident that clinical education is the most stressful (Alzayyat & Al-Gamal, 2014; Elliot, 2002).

Even beyond the expected and often discussed stressors related to clinical education, are the events that are highly emotionally distressing or traumatic to students who witness them or are directly involved. A critical incident is an event which becomes a perceived threat to one's well-being, or that of others (Everly & Mitchell, 1999). According to Caine and Ter-Bagdasarian (2003), critical incidents include "any sudden, unexpected event that has an emotional impact sufficient to overwhelm the usual coping skills of an individual or group, and that causes significant psychological distress in healthy persons" (p. 59). Traumatic events are those which result in actual or potential threatened death or serious injury or any other threat to personal integrity, or from witnessing these types of situations occurring to others, resulting in fear, horror, or helplessness (American Psychiatric Association [APA], 2013). For the purpose of this

study, these two types of events were grouped and referred to as ‘critical events’ or ‘critical events.’

Direct or indirect involvement in critical events can lead to a number of mental health conditions in healthcare professionals. These conditions include post-traumatic stress disorder (PTSD), acute stress disorder (ASD), secondary traumatic stress (STS), burnout, and vicarious trauma among others (Beck, 2011). Student nurses are also at risk, and the risk may be even greater due to the limited amount of education they have had on these topics prior to entering the clinical setting and limited support systems both during and after the event.

Many clinical nurse educators are not prepared for how to support students through the psychological elements of critical events. Because of this, many students are not receiving adequate pre-briefing and debriefing of these events (Heise & Gilpin, 2016). Though the literature includes many studies focused on helping healthcare professionals through critical events, there is very little information in the literature on the topic of supporting students through critical events in the clinical setting.

### **Purpose of the Study**

The purpose of this grounded theory qualitative study was to better understand how students are prepared for critical events, how students are supported before, during, and after critical events, how students cope with psychological trauma, and for those who reach psychological recovery, how recovery occurs. The phenomenon of psychological support studied was generally defined by the author as ‘active participation in the prevention of negative mental and physical sequelae (psychological trauma) that result from witnessing emotionally difficult or traumatic situations, known as critical events.’

My goal was to study the experiences of students who had experienced critical events that the student considered traumatizing, determine what actions were taken, if any, to decrease emotional distress and prevent psychological trauma, identify which actions were most effective in preparing students for critical events and supporting students through these events, and better understand how students reach psychological recovery, if they are able to do so, after witnessing emotionally difficult critical events in the clinical setting. This study provided knowledge that can be used by nurse educators in the didactic setting, and clinical nurse educators in the clinical setting, to better prepare students for critical events and support students after critical events.

### **Significance of the Study**

This qualitative study provides a theory describing how students cope with psychological trauma from critical events in the clinical setting, and provides data to improve methods for supporting nursing students who have witnessed traumatic events, unanticipated adverse events, patient death, and other emotionally difficult events they may encounter in clinicals. These events are referred to as ‘critical events.’ This study also helped identify what training faculty and staff nurses need to better support students in the clinical setting. The research project was developed based on my personal experiences as a faculty member in the clinical setting, where I have had students experience unanticipated patient death and traumatic patient events in the intensive care unit and emergency department during clinical rotations. My hope is that this research will aid in informing possible changes to faculty and staff nurse preceptor training in order to better prepare faculty and staff to support nursing students in the clinical setting.

## **Research Questions**

For this study, two research questions were considered:

- Q1 What is the process students go through to psychologically recover after witnessing critical events?
- Q2 What is the relationship between student support measures and psychological recovery after witnessing critical events?

## **Overview of Methodology and Philosophical Framework**

This study was conducted as a grounded theory qualitative study. Qualitative research is

an inquiry process of understanding based on a distinct methodological approach that explores a social or human problem. The researcher builds a complex, holistic picture; analyzes words; reports detailed views of participants; and conducts the study in a natural setting. (Creswell & Poth, 2018, p. 326)

Qualitative research is based on the idea that knowledge is constructed through studying things in their natural settings in an attempt to interpret and make meaning of phenomena (Denzin & Lincoln, 2011; Merriam & Tisdell, 2016).

Qualitative methods are chosen:

1) to explore the inner experiences of participants, 2) to explore how meanings are formed and transformed, 3) to explore areas not yet thoroughly researched, 4) to discover relevant variables that later can be tested through quantitative forms of research, and 5) to take a holistic and comprehensive approach to the study of phenomena. (Corbin & Strauss, 2015, p. 5)

Participants were interviewed in order to understand their experiences with witnessing critical events in the clinical setting. The aim of the interviews was to learn about the students' preparation for such situations, what types of preparation they thought would have been helpful prior to starting clinicals, what types of support were received, students' thoughts about the support they received, effectiveness of support to prevent

psychological trauma or enhance psychological recovery, other factors that affect recovery or lack of recovery, and how the experience shaped their future nursing education and careers as nurses. Though this study could have been done as a phenomenological study, my aim was to not only learn about participants' lived experiences with critical events, but to also identify the relationships between support and coping mechanisms and the students' ability to reach psychological recovery. Grounded theory moves beyond understanding lived experience, to describing how phenomena relate to one another in order to show relationships between concepts and generate theory.

### **Grounded Theory**

A grounded theory approach was chosen for this qualitative study. Grounded theory aims to generate or discover a theory to explain, predict, or describe a phenomenon. In grounded theory, the primary outcome of a study is “a theory with specific components: a central phenomenon, causal conditions, strategies, conditions and context, and consequences” (Creswell & Poth, 2018, p. 89). Grounded theory does not begin with a hypothesis or theoretical framework, and involves qualitative data collection and a multiple-step data analysis process. Data collection and data analysis are performed simultaneously, and the investigator constantly compares data across participants to create categories that later evolve into concepts. It is the relationships between concepts that eventually combine to generate a set of theoretical propositions.

A grounded theory approach was selected because of the lack of knowledge regarding how student nurses are prepared for critical events, how student nurses are debriefed and supported after critical events, how psychological distress and/or trauma

develops in student nurses who witness these events, and how student nurses reach psychological recovery. Grounded theory was used to develop a theory and model to describe the process by which student nurse preparation and support prevents psychological trauma or assists the student in psychological recovery after witnessing critical events. Grounded theory will be discussed in detail in Chapter III- Methodology.

### **Personal Stance as a Researcher**

As a researcher, understanding another person's reality in the situation is of great importance to me. I aim to understand the perspective of others, and compare how different people from different backgrounds and settings approach similar situations. I am trying to better understand how to decrease emotional distress and psychological trauma in clinical nursing students, and how to best aid in psychological recovery by first understanding the situation from the student's point of view. The philosophical framework of grounded theory provides the foundation for the approach.

### **Definition of Terms**

- Acute stress disorder (ASD)- "Severe numbing, derealization, inability to remember stressful event, fear, helplessness, or horror that occurs within one month of exposure to extreme stress" (Halter, 2014, p. 672).
- Acute trauma- "trauma occurring as a single event or for a limited time" (Foli & Thompson, 2019, p. 212).
- Anxiety- "A state of feeling apprehension, uneasiness, uncertainty, or dread; results from a real or perceived threat whose actual source is unknown or unrecognized" (Halter, 2014, p. 672), or the "anticipation of a future threat" (Anxiety Disorders, 2013, para. 1).

- Adverse event- “harm to a patient as a result of medical care or harm that occurs in a health care setting” (Levinson, 2010, p. 2).
- Affect- “the external manifestation of a feeling or emotion that is manifested in facial expression, tone of voice, and body language...the term may be used loosely to describe a feeling, emotion, or mood” (Halter, 2014, p. 672).
- Burnout- “a state of physical , emotional, and mental exhaustion caused by long-term involvement in emotionally demanding situations” (Pines & Aronson, 1988, p. 9) that can lead to depersonalization, decreased work satisfaction, negative attitudes, and a decreased sense of personal accomplishment (Hinderer et al., 2014; Pines & Aronson, 1988).
- Compassion- “a choice made by caregivers to demonstrate empathy, kindness, concern, and a willingness to help toward self (self-compassion), patients (compassion and compassion satisfaction), and team members (team compassion)” (Foli & Thompson, 2019, p. 212).
- Compassion Fatigue- “expenditure of compassion due to psychological caring efforts that is in excess of emotional resources; psychological recovery is needed to be fully present to patients” (Foli & Thompson, 2019, p. 212).
- Complex trauma (interpersonal trauma)- trauma inflicted by caregivers and others trusted to provide for the physical and emotional needs a patient (Foli & Thompson, 2019).
- Chronic trauma- “trauma that is sustained, repeated, and prolonged” (Foli & Thompson, 2019, p. 212).



- Crisis- a profound disruption of a person's normal psychological homeostasis (Roberts, 2005) where normal coping mechanisms fail in helping the individual cope with the distress, resulting in an inability to function as usual. Crisis involves: 1) a traumatic event, 2) perception by the individual that the event is significantly distressing, and 3) the inability of the individual to resolve the disruption using normal coping mechanisms (Halter, 2014).
- Critical events- traumatic events, unanticipated adverse events, patient death, and other emotionally difficult events
- Debriefing- reflecting on and discussing a stressful experience. Can be done individually or as a group and usually occurs within 12 to 48 hours of a traumatic event (Halter, 2014).
- Depression- a depressed mood that can be accompanied by one or more of the following symptoms:
  - lack of interest in previously pleasurable activity...fatigue; sleep disturbances; changes in appetite; feelings of hopelessness or worthlessness; persistent thoughts of death or suicide; an inability to concentrate or make decisions; and a change in physical activity. (Halter, 2014, p. 250)
- Developmental trauma- "trauma that negatively impacts the developmental trajectory of children and youth" (Foli & Thompson, 2019, p. 212).
- Distress- "a negative, draining energy that results in anxiety, depression, confusion, helplessness, hopelessness, and fatigue" (Halter, 2014, p. 674).
- Fear- "the emotional response to real or perceived imminent threat" (Anxiety Disorders, 2013, para. 1)

- Flashbacks- “dissociative experiences during which an event is relived and a person behaves as though he or she is experiencing the event at that time” (Halter, 2014, p. 676).
- Historical trauma (intergenerational trauma)- “trauma passed down to future generations so that the offspring are vulnerable to the original trauma” (Foli & Thompson, 2019, p. 213).
- Major depressive disorder- depression symptoms lasting two weeks or longer (Halter, 2014).
- Panic attacks- “Abrupt surges of intense fear or intense discomfort that reach a peak within minutes, accompanied by physical and/or cognitive symptoms” (Anxiety Disorders, 2013, para. 8).
- Post-traumatic growth- “improvement in psychological functioning following a traumatic experience, especially in the areas of self-evaluation, personal relationships, and personal philosophy” (Coleman, 2015, n. p.)
- Post-traumatic stress disorder (PTSD)
  - an anxiety disorder characterized by persistent reexperiencing of a highly traumatic event that involved actual or threatened death or serious injury to self or others, to which the individual responded with intense fear, helplessness, or horror. (Halter, 2014, p. 679)
- Psychological distress- “refers to the general concept of maladaptive psychological functioning in the face of stressful life events” (Abeloff, Armitage, Lichter, & Niederhuber, 2000, p. 556).
- Psychological recovery- a process that involves the establishment of safety, remembrance, and mourning, and reconnection with ordinary life that results in a sustained feeling of being psychologically safe (Foli & Thompson, 2019).

- Psychological trauma- severe psychological distress that results from acute or chronic mental or physical trauma, complex trauma, developmental trauma, physical or emotional neglect, vicarious/secondary trauma, workplace violence, historical trauma, system-induced trauma, second victim trauma, trauma from disasters, and any event that causes severe psychological distress. Psychological trauma may lead to outcomes such as anxiety, depression, acting out, aggression, emotional dysregulation, ASD, or PTSD (Foli & Thompson, 2019).
- Resilience- “positive adaption following a potentially traumatic event that can manifest as a trait, a process, a defense mechanism, or an outcome” (Foli & Thompson, 2019, p. 214).
- Secondary trauma/Secondary trauma syndrome (STS)- a PTSD-like condition consisting of physical and emotional symptoms resulting from
  - empathetic engagement with others who are undergoing traumatic experiences. STS has the potential to be life-altering, impacting future empathetic work resulting in an altered worldview and interpersonal difficulties. (Arnold, 2020, p. 152)
- Second victim trauma- “the trauma that the nurse may experience as a result of a medical error or adverse event” (Foli & Thompson, 2019, p. 215).
- Social support- “tangible and intangible resources that family and friends offer to act as buffers to and mitigate stress and trauma. Social support contributes to feelings of interpersonal connectedness” (Foli & Thompson, 2019, p. 215).
- Stress- “the nonspecific response of the body to any demand” (Selye, 1976, p. 15).

- Stress response- the effects of stress consisting of three stages: the initial reaction known as the ‘alarm reaction,’ the resistance or adapting stage, and exhaustion, occurring when resources are depleted (Selye, 1976).
- Toxic stress- “Exposure to stress that is intense, prolonged, and severe, resulting in various negative outcomes such as dysregulation and maladaptive coping” (Foli & Thompson, 2019, p. 216).
- Trauma
  - experiences that cause intense physical and psychological stress reactions. It can refer to a single event, multiple events, or a set of circumstances that is experienced by an individual as physically and emotionally harmful or threatening and that has lasting adverse effects on the individual’s physical, social, emotional, or spiritual well-being. (Substance Abuse and Mental Health Services Association [SAMHSA], 2014, n. p.)
- Vicarious trauma/indirect trauma
  - the nurse, through witnessing or living through others’ trauma, may begin to experience secondary traumatic symptoms. In these instances, nurses are not experiencing firsthand trauma but experiencing the symptoms related to having gone through such stress. (Foli & Thompson, 2019, p. 215)
- Workplace violence- “verbal, written, or physical abuse/assault from patients and visitors directed toward nurses. Workplace violence also includes nurse-to-nurse horizontal violence (incivility)” (Foli & Thompson, 2019, p. 217).

## **Delimitations and Limitations**

### **Delimitations**

Delimitations are limiting characteristics or defined boundaries within the investigator’s control that come from study design, methodology, theoretical framework, or other elements of the study. The following were considered as delimitations of the study:

- The findings from this qualitative grounded theory study provide new insights into the relationship between support and psychological trauma in student nurses, but the findings will be unique to students in northern Utah university-based schools of nursing, and may have limited generalizability until further research is done outside the geographical area of this study.
- Participants for this study were limited to undergraduate prelicensure Associate Degree in Nursing (ADN) or Bachelor of Science in Nursing (BSN) students who had witnessed a patient event within the past year to year and a half. Limiting the population and time since the event eliminated other potential participants who could have provided insight into the phenomena being studied.

### **Limitations**

Limitations are factors in the research process that are outside of the investigator's control. The following were considered as limitations of the study:

- Participants were referred through voluntary means and were not recruited by faculty or the investigator for ethical reasons. Due to the sensitive nature of the study, students may not have wished to volunteer their personal experiences and participate in the study, even if the experiences fit the criteria for the study.
- Participant responses cannot be guaranteed to be completely accurate due to memory lapses, or participants intentionally or unintentionally not being completely honest due to the sensitive nature of the topic.
- Participants may have prior work experience, life experience, education, age, or developmental differences that affect individual coping mechanisms and needs.

## **Summary**

This qualitative study was designed to explore the experiences of student nurses who witness critical events in the clinical setting and the support received prior to, during, and after the event. The aim of the study was to better understand how students are prepared for critical events, how students are supported before, during, and after critical events, how students cope with psychological distress, and how students reach psychological recovery.

This chapter presented the scope of the problem, the purpose of the study, the significance of the study, the research questions, the methodology and theoretical framework, definition of terms, and delimitations and limitations. Chapter II will present a review of the literature, the current state of nursing science, and a discussion of a pilot study informing the current research project.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

This chapter provides a review of the literature related to psychological trauma in nursing, student experiences related to critical events in the clinical setting, clinical nurse educator support, and clinical nurse educator training. This chapter also provides the current state of nursing science in relation to supporting student nurses through critical events, and discussion of a pilot study on clinical nurse educator experiences with students who witness critical events in the clinical setting.

#### **Literature Review**

An extensive literature search was performed on the topics of stress, various forms of psychological trauma in nursing, student experiences with critical events in the clinical setting, student psychological support in the clinical setting, and clinical nurse educator experiences. The following databases were utilized in the literature search: CINAHL, Academic Search Premier, PsychINFO, Psychology and Behavioral Health Collection, Ovid, PubMed, Cochrane, EbscoHost ERIC, EbscoHost Medical Databases, and EbscoHost Education Databases. The following search terms were used: “student nurse stress,” “student stress AND clinical education,” “student nurse mental health,” “clinical nurse educator AND support,” “clinical instructor AND support,” “secondary trauma,” “secondary trauma AND nursing,” “post-traumatic stress,” “post-traumatic stress AND nursing,” “post-traumatic stress AND healthcare,” “coping AND nursing,” “compassion fatigue,” “patient death AND clinical,” “student nurse AND dying patient,”

“acute stress disorder,” “acute stress disorder AND nurse,” “psychological trauma,” “critical event,” “critical patient event,” “critical incident,” “traumatic event AND coping,” “flashbacks,” “vicarious trauma,” “clinical nurse educator training,” and “clinical nurse educator preparation.” Relevant articles were read, analyzed, and evaluated.

### **Stress in Student Nurses**

An abundance of nursing literature supports the high incidence of stress among nursing students. Most students enter nursing education with the understanding that stress is an expected part of their education. Stress comes from many elements of nursing education: studying large amounts of detailed critical information, written and practical examinations, simulation experiences, written assignments, and the general understanding that knowledge leads to safe patient care, for example. Of all the experiences that a student nurse will encounter, clinical education is the most stressful (Alzayyat & Al-Gamal, 2014; Elliot, 2002). Students often fear clinical placements, interaction with staff and patients, clinical instructors, workload, failure, and the potential for making mistakes. Stress can be a benefit by forcing individuals toward achievement, or can be harmful, causing negative effects (Alzayyat & Al-Gamal, 2014). According to Foli and Thompson (2019), “It is finding that balance between motivating stress and toxic stress that we want to achieve” (p. xxvi). Though there is much that can be learned from literature on stress in nursing education, very little information addresses clinical stressors, specifically, making this an under-researched area of nursing education. In a systematic review of the literature, Alzayyat and Al-Gamal (2014) found that the vast majority of studies covered “academic or social sources of stress,” rather than clinical



stressors (p. 407). In a quantitative study by Watson et al. (2008), the authors studied general student nurse life stress and its contribution to psychological distress, but the study did not focus on the relationship of critical events witnessed in the clinical setting and the development of psychological distress or trauma that results from witnessing such events.

Events in clinical can range from rewarding to traumatic. Students care for others experiencing joy and triumph over illness, but also care for those experiencing crisis and extreme vulnerability (Foli & Thompson, 2019). Events witnessed can cause trauma, defined by the Substance Abuse and Mental Health Services Administration (SAMHSA) as

experiences that cause intense physical and psychological stress reactions. It can refer to a single event, multiple events, or a set of circumstances that is experienced by an individual as physically and emotionally harmful or threatening and that has lasting adverse effects on the individual's physical, social, emotional, or spiritual well-being. (SAMHSA, 2014, n. p.)

The literature suggests that healthcare professionals who care for traumatized individuals risk developing psychological distress, psychological trauma, or other mental health conditions (Deville, Wright, & Varker, 2009; Newell & MacNeil, 2010). Upon witnessing emotionally difficult or traumatic events, long-term consequences can occur if witnesses do not receive the support and counseling they may need (APA, 2013; Carson & Kuipers, 1998). Shipton (2002) found that clinical stressors led to an increase in student depression, anxiety, fear, frustration, nervousness, loneliness, and other symptoms.

## **Critical Events**

Even beyond the expected and often discussed stressors related to clinical education, are the events that are highly emotionally distressing or traumatic to students who witness them or are directly involved. Not all students will experience these types of events during their nursing education, but for those who do, the event can have lasting effects. A critical incident is an event which becomes a perceived threat to one's well-being, or that of others (Everly & Mitchell, 1999). Traumatic events are those which result in actual or potential threatened death or serious injury or any other threat to personal integrity, or from witnessing these types of situations occurring to others, resulting in fear, horror, or helplessness (APA, 2013). Both 'critical incidents' and 'traumatic events' involve directly witnessing the event or the resuscitation/treatment of the event immediately after it occurred. For the purposes of this study, these two types of events are referred to as 'critical events.'

A major source of stress for student nurses is the possibility of witnessing patient death during clinical rotations. In a study by Beck (1997), the author found that students were afraid of their patients dying. Students spoke of fear of being in the room, feeling enveloping sadness, feeling helpless, and reported how difficult it was to see patients progressively become worse. One student reported emotionally distancing themselves from the patient and crying inside. Another reported feeling angry that they couldn't take the patient's pain away. And another reported leaving the patient's room to cry. One poignant message from this study was that a lot of the students' anxiety stemmed from personal feelings of inadequacy and limited clinical experience (Beck, 1997).

Other examples of critical events that students could experience in the clinical setting include: witnessing trauma in the emergency department (ED), OR, or ICU, or other emergency situations such as myocardial infarction (heart attack), pulmonary embolism, brain attack (stroke), witnessing extreme patient suffering, traumatic deliveries that result in hemorrhage or maternal or fetal demise, crash cesarean section (c-section), cardiopulmonary resuscitation (CPR) and/or defibrillation of patients, caring for patients post-suicide attempt, withdrawal of support in critical care units, rapid response, respiratory failure or code blue situations, domestic violence, near-drowning resuscitation, severe neglect or mental or emotional abuse, organ harvest or organ transplant in the OR, elective or spontaneous abortion, mental health patients being treated for overdose or withdrawal from illicit drugs or alcohol, or violent mental health patients that threaten personal safety.

### **Psychological Trauma**

Students who enter schools of nursing, due to their caring demeanor, often feel sadness or empathy when learning of their patients' situations, and clinical educators need to be aware and look for signs that students are sad, anxious, or fearful in clinical. Sometimes emotions become too much for students to handle. Students who are currently suffering from emotional situations, such as personal health challenges, financial stress, divorce or separation, or break-ups with significant others may be triggered during clinical rotations. Similarly, students who come into clinical practice with histories of childhood abuse, poverty, illness, hospitalization, death of family members, or who come from countries where they have experienced war or famine, risk triggering emotional

reactions should they encounter patients in the clinical setting who are, or have in the past, experienced similar circumstances (Lane & Corcoran, 2016).

Traumatic events are usually outside the victim's control. Because of this, certain inadequate coping responses frequently develop that are directly related to control. Supercontrol is a trait that develops when the victim attempts to take charge of every aspect of his/her life. Opposite of supercontrol is helplessness, where victims incorrectly assume that because they could not control the traumatic event, then they are unable to control all others, and completely give up. Other inadequate or dangerous coping mechanisms include self-medicating with drugs or alcohol, or even intentionally putting themselves in harm's way in order to encounter another traumatic event in an attempt to master control (Flannery, 1999).

If students are not able to cope with what they witness, critical events can lead to psychological trauma. Psychological trauma is severe psychological distress that results from acute or chronic mental or physical trauma, complex trauma, developmental trauma, physical or emotional neglect, vicarious/secondary trauma, workplace violence, historical trauma, system-induced trauma, second victim trauma, trauma from disasters, and any event that causes severe psychological distress. Psychological trauma may lead to outcomes such as anxiety, depression, acting out, aggression, emotional dysregulation, ASD, or PTSD (Foli & Thompson, 2019).

### **Witnessed Events or Direct Involvement**

Too often nursing students are not mentally prepared to witness critical events and do not have the coping skills necessary to cope during or afterward (Gerow et al., 2010; Heise & Gilpin, 2016; Parry, 2011). Direct exposure to a traumatic event can cause acute

stress disorder (ASD), post-traumatic stress disorder (PTSD), moral distress, or burnout (Beck, 2011; Christodoulou-Fella, Middleton, Papathanassoglou, & Karanikola, 2017).

Witnessing trauma has been hypothesized to have differential effects on memory and feelings of helplessness that may be important in PTSD etiology... [and] it is possible that witnessing may trigger other psychological problems in vulnerable individuals. (Atwoli, Platt, Williams, Stein, & Koenen, 2015, p. 1236)

In a study of 4,351 adults in Africa, Atwoli et al. (2015) found that witnessing trauma was significantly associated with having anxiety or a mood disorder, and that those who witnessed trauma were 50% more likely to develop anxiety or a mood disorder than those who did not. The study lists 29 different witnessed events that have the potential to cause psychological trauma in individuals. The list includes events such as witnessing a death, seeing the body of a deceased person, seeing someone who is seriously injured, witnessing abuse, witnessing accidents, natural disasters, wars, and the death of a loved one, among others. Though the study was not conducted within a healthcare setting, and did not involve healthcare professionals, the situations listed are events that healthcare professionals witness both in and outside the hospital setting.

Morrisette (2004) and Tully (2004), describe the experiences of student nurses in mental health settings who witness unsettling patient behavior, or hear vivid accounts of traumatic events. While caring for perpetrators of violence or abuse, students reported difficulty remaining a caring professional while attempting to brush off negative thoughts toward those they were caring for. Morrisette (2004) states that student nurses in mental health settings who experience traumatic events may feel fear, disorientation, and vulnerability, and Tully (2004) warns that in mental health settings, students are at risk of developing a physical or a psychiatric illness. Morrisette (2004) perfectly describes the issue by stating:

Because the observed or described event did not directly involve them, student nurses struggle to associate their emotional disposition with the observation and/or narrative that unfolded in front of them. It is ethically and professionally incumbent upon nurse educators to ensure that students are aware of the potential occupational hazards inherent in psychiatric nursing while remaining sensitive to their needs. (p. 536)

Rice and Warlund (2013) and McKenna and Rolls (2011) describe the experiences of midwives and midwifery students who have witnessed traumatic deliveries, stillbirths, and neonatal death and the emotional impact it had on participants. The midwives expressed feelings of wishing they could have done something to make it better, feeling helpless, guilt, and critical self-analysis; feelings that mirror other studies on the emotional effects of working in healthcare (Sabo, 2006; Scott et al., 2009; Showalter, 2010; Thomas & Wilson, 2004).

In a study of 80 emergency department nurses in four hospitals, the authors found that 75% of the sampled nurses exhibited at least one symptom of secondary traumatic stress within the past week (Morrison & Joy, 2016). Events that led to STS included unexpected death, trauma, violence, and resuscitation, among others. Students in emergency department clinical rotations witness the same events as staff nurses, and are possibly at risk for the same effects as the healthcare workers they observe and work alongside.

**Post-traumatic stress disorder and acute stress disorder.** Post-traumatic stress disorder refers to intense physical and psychological stress reactions that are caused by an event, or multiple events or circumstances, that an individual finds physically or emotionally harmful or threatening (SAMHSA, 2014). For those older than six years of age, the American Psychiatric Association's diagnostic criteria for PTSD are:

1. Exposure to the threat (direct experience, witnessing an event, learning of a close friend/family member's experience, experiencing repeated or extreme exposure to an event)
2. One or more intrusive symptoms related to the trauma (recurrent, involuntary distressing memories, dreams, or dissociative reactions, such as flashbacks, psychological distress, and physical reactions related to the event)
3. Avoidance of stimuli of the event (evading memories, thoughts, and feelings as well as external reminders)
4. Alterations in mood and cognition after the event (loss of memory regarding the event)
5. Experiencing reactions and arousals associated with the event (loss of memory regarding the event)
6. Experiencing reactions and arousals associated with the trauma
7. Symptoms lasting for more than one month
8. Functioning that has been impacted (social, occupational, and so on)
9. Symptoms that cannot be attributed to substances or a medical condition (APA, 2013, p. 271-272)

Post-traumatic stress disorder (PTSD) shares the same causes and symptoms as ASD, and the two diagnoses are differentiated by the amount of time symptoms last. Symptoms of ASD last less than one month, and PTSD has a longer duration of greater than one month (APA, 2013). Post-traumatic stress disorder was introduced into the Diagnostic and Statistical Manual of Mental Disorders III (DSM-III) in 1980 (American Psychiatric Association [APA], 1980), and veterans from the Vietnam War were the first to be diagnosed (Beck, 2011). In a study by Beck, LoGiudice, and Gable (2015) of STS and PTSD in certified nurse midwives (CNM's), of the 473 CNM's studied, 29% reported high to severe STS and 36% screened positive for PTSD using the DSM IV criteria. Causes were deemed to be witnessing and/or participating in births that resulted in neonatal demise, shoulder dystocia, or infant resuscitation (Beck et al., 2015).

Flashbacks, a "type of intense involuntary memory involving repeated reliving of the traumatic event, accompanied by marked sensory detail and emotional arousal" (Brewin, Huntley, & Whalley, 2012, p. 234), are a symptom of PTSD and can often be

observed in persons recovering memories from traumatic events. Not all flashback memories are found to be completely accurate, however, and it is generally accepted that flashbacks may not correspond to actual events (Brewin et al., 2012). Hauschildt, Peters, Jelinek, and Moritz (2012) studied memory in both traumatized and non-traumatized individuals, and found that those with PTSD showed inferior memory sensitivity, and also found an association between state dissociation and false memories.

Sometimes therapeutic suggestion may introduce inaccurate memories, and faculty and healthcare professionals need to be careful in conversation so as to not change the student's memories of the event when debriefing (Brewin et al., 2012). The effects of stress can also influence memories of events. Studies show that greater emotion and greater sensory detail may lead to better memory recall of the event (Brewin et al., 2012).

**Moral distress.** Moral distress can be caused by ethical dilemmas students face in the clinical setting (Sasso, Bagnasco, Bianchi, Bressan, & Carnevale, 2015; Wojtowicz, Hagen, & Van Daalen-Smith, 2014). Students may be exposed to situations that contradict their personal beliefs and values, and may experience psychological distress as a result (Christodoulou-Fella et al., 2017). Examples include witnessing abortion in the ER or OR, CPR on the elderly or those at end of life, withdrawal of life support on a patient, or blood or blood product transfusion. Students may also experience psychological trauma when witnessing patients who may have hurt themselves through suicide attempts, alcohol or drug overdose, or those who are physically, mentally, sexually, or emotionally abused or who abuse others (Bercier & Maynard, 2015; Foli & Thompson, 2019; Morrissette, 2004; Tully, 2004; Wies & Coy, 2013)



**Burnout.** Burnout is defined as “a state of physical, emotional, and mental exhaustion caused by long-term involvement in emotionally demanding situations” (Pines & Aronson, 1988, p. 9) that can lead to depersonalization, decreased work satisfaction, negative attitudes, and a decreased sense of personal accomplishment (Hinderer et al., 2014; Pines & Aronson, 1988). Burnout occurs over time and is not the result of a single traumatizing event (Elwood, Mott, Lohr, & Galovski, 2011; Maslach & Jackson, 1981). Burnout is often related to increased exposure to trauma patients, such as working more hours per shift, decreased support from coworkers, decreased coping skills, and more time in direct patient care (Hinderer et al., 2014; Lavoie, Talbot, & Mathieu, 2011). Student nurses, as well as new graduate nurses have been shown to have high levels of burnout (Deary, Watson, & Hogston, 2003; Hinderer et al., 2014).

### **Non-Witnessed Events or Indirect Exposure**

Indirect involvement in a patient’s traumatic experience can cause emotional distress as well, such as reading patient histories, or listening to patients retell traumatic experiences they have been through (Foli & Thompson, 2019). Mental health professionals are particularly prone to indirect psychological trauma due to increased exposure to forms of talk therapy; however, any health care professional who learns of traumatic patient experiences through shift report, physician rounds, participation in therapy sessions, patient history-taking, patient assessment, or reviewing patient charts is at risk for indirect psychological trauma, such as vicarious traumatization or secondary traumatic stress (Beck, 2011).

**Vicarious traumatization.** Vicarious traumatization (VT) is defined as a gradual “transformation in the inner experience of the therapist [or healthcare worker] that comes

about as a result of empathetic engagement with clients' trauma material" (Pearlman & Saakvitne, 1995, p. 31). Vicarious traumatization can lead to "disturbances in the therapists' self-identity, spirituality, world view, and cognitive frame of reference" (Beck, 2011, p. 3), as well as increasingly negative beliefs about power, safety, independence, esteem, and/or intimacy (Elwood et al., 2011).

**Secondary traumatic stress.** Secondary traumatic stress (STS) occurs when a person has indirect exposure to a traumatic event through a patient retelling the event, history reading, or learning about the event from another person (Beck, 2011; Joinson, 1992). Essentially, STS is the development of PTSD in those who play a significant role in the traumatized person's life, such as family, friends, or healthcare providers (Elwood et al., 2011; Figley, 1995; Hinderer et al., 2014).

Figley (1995) who originally defined STS, stated that the effects of secondary exposure to a traumatic event are essentially the same as if the person had primary exposure to it. Figley (1995) defined STS as: "the natural, consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person" (p. 10). Exposure to the event through knowledge of the experience (non-direct exposure), and empathy, an attribute of most healthcare workers, are antecedents to STS, and symptoms include helplessness, confusion, cognitive shifts, relational disturbances, and feelings of isolation (Elwood et al., 2011; Figley, 1995). Figley (1995) originally described STS as being non-direct, and much of the literature describes non-direct STS in the form of exposure to traumatic experiences described by patients through report or patient charts (Elwood et al., 2011; Pearlman & Saakvitne, 1995); however, a great deal

of the literature uses the term STS for healthcare providers who directly witness traumatic events, but are not directly part of the trauma (no trauma to one's self), such as physically witnessing traumatic births or patient death (Beck et al., 2015). Arnold, in a recent analysis of the concept, proposed a new definition of STS

Secondary traumatic stress, characterized as a PTSD-like condition, is the constellation of physical and emotional symptoms that results from empathetic engagement with others who are undergoing traumatic experiences. STS has the potential to be life-altering, impacting future empathetic work resulting in an altered worldview and interpersonal difficulties. (Arnold, 2020, p. 152)

**Compassion fatigue.** Compassion fatigue, described by Figley (1995) as the emotional response that results from exposure to a traumatized individual, is now often the preferred term for STS, and the term highlights one consequence of the symptom- “a reduction in the capacity or interest in being empathetic towards a client, believed to result from exposure to patients’ difficulties combines with the ongoing expenditure of empathy toward patients” (Elwood et al., 2011, p. 26).

The literature blurs the lines with STS, using the term for both witnessed traumatic events and indirect contact. The terms STS, VT, and CF are used interchangeably in the literature and need to be clarified to avoid lack of consensus and inconsistency (Bercier & Maynard, 2015; Craig & Sprang, 2010; Elwood et al., 2011; Sabin-Farrell & Turpin, 2003). Figley originally differentiated STS and CF by stating that the term STS was the result of non-direct exposure to trauma, and CF was the result of exposure to the individual who was traumatized (Komachi, Kamibeppu, Nishi, & Matsuoka, 2012). An updated and commonly used definition of CF comes from a concept analysis by Coetzee and Klopper (2010). The authors define compassion fatigue in nursing as:

a state where the compassionate energy that is expended by nurses has surpassed their restorative processes, with recovery power being lost. All these states manifest with marked physical, social, emotional, spiritual, and intellectual changes that increase in intensity with each progressive state. (Coetzee & Klopper, 2010, p. 237)

## **Crisis**

If individuals are not able to cope with psychological trauma from critical events, crisis may occur. A crisis results from the individual's loss or threat to personal goals or well-being, overwhelming one's usual coping mechanisms, resulting in impaired functioning or psychiatric symptoms or disorders (Everly & Mitchell, 1999; Flannery, 1999). Crisis events are specific, often unexpected, time-limited events which can be life-threatening (Flannery, 1999).

### **Current State of Nursing Science in Relation to Supporting Student Nurses Through Critical Events**

#### **Student Preparation**

Although student nurses are introduced to curriculum on death and dying at some point during their studies, the emphasis in the first couple of years of nursing school typically focuses on skill acquisition, technical knowledge, and value development. Students typically enter the clinical setting within the first few months of nursing school prior to experiencing death and dying curriculum. Additionally, training on trauma and resuscitation often does not occur during the first year of schooling (Loos, Willetts, & Kempe, 2014). Lack of support services, time constraints, and nursing culture often discourage nurses from taking the time to process emotions, and "as a result, nurses are often left to deal with their grief at home, alone and unsupported," (Loos et al., 2014, p. 192), which is likely the same for nursing students.

In a study by Loos et al. (2014), the authors found that it was not necessarily the experience of death that was the most difficult for students to cope with, rather, it was the grief, and lack of support related to the grief process. Grief can be an overpowering emotion and is often a neglected and unacknowledged issue in nursing education. It is crucial that nurse grief not only be recognized and accepted within the profession, but be addressed in schools of nursing, along with coping mechanisms and support resources (Loos et al., 2014).

Student anxiety related to critical events should be addressed prior to entering the clinical setting (Beck, 1997). Core beliefs may become challenged as students begin to see their worldview in a different light through the painful events of others. Three core beliefs challenged by psychological trauma proposed by Janoff-Bulmann (1985) are: personal vulnerability, the positive view of oneself, and the world as meaningful and orderly. Students should be prepared for the types of emotions they may feel when these beliefs are challenged. Beck (1997) suggests that once students feel more comfortable with their emotions and are better prepared emotionally to care for the dying, students will be better able to face their own reactions to death. Nursing curriculum should focus on empowering students in their care for dying patients, and time needs to be given to help students sort out their emotions prior to encountering critical events in the clinical setting (Beck, 1997). During clinical pre- or post-conference, clinicians can be invited to speak with students about their expertise in caring for the dying. Gates and Gillespie (2008) suggest that nurses be educated about their vulnerability to STS when working with traumatized patients, and be taught about the signs and symptoms, risk factors, and appropriate coping mechanisms.

## **Psychological Trauma Management and Support**

“Clinical attention is usually devoted to people in harm’s way and, ‘...little to those who care for and worry about them’” (Figley, 1995, p. 6, quoted by Morrissette, 2004, p. 535). A stigma continues to exist that healthcare providers need to be stoic, and that seeking professional services for emotional distress is considered “antithetical to professional ideal” (Morrissette, 2004, p. 535). Student nurses often feel a false sense of security, and though they realize they have personal issues that need to be explored, they often do not seek help, viewing themselves as providers of care, not recipients (Morrissette, 2004).

McKenna and Rolls (2011) found that grieving students often turned to family, friends, and other students to help resolve their grief; however, these people were not prepared to provide the support that was needed. Wilson (1994) theorizes that social, economic, and personal support persons in a traumatized person’s life are like a protective ‘membrane’ around the traumatized, and often being a part of the membrane can cause stress for those participating. Counseling services are typically available in universities, but students often do not know that services exist or do not seek these services (McKenna & Rolls, 2011). Traditional support measures used to manage and treat STS, VT, ASD, PTSD, and CF in mental health fields include individual or group therapy, cognitive behavioral therapy, psychoeducation, crisis debriefing, psychological debriefing, crisis intervention stress debriefing, provision of supervision, workshops, and a supportive organizational culture (Bercier & Maynard, 2015; Loos et al., 2014).

Healthcare personnel who experience distressing critical events require intervention in order to prevent anxiety, depression, somatic pain, withdrawal, fear, helplessness, intrusive symptoms, avoidance symptoms, and hyper vigilance symptoms. These symptoms can lead to Acute Stress Disorder (ASD), a condition which if not resolved, can then lead to Post Traumatic Stress Disorder (PTSD), a serious and potentially lifelong condition (APA, 2013; Flannery, 1999).

Critical Incident Stress Management (CISM), a comprehensive crisis intervention approach, is often offered to healthcare personnel with the purpose of stabilizing and mitigating acute psychological distress and preventing further psychological conditions or disorders (Everly & Mitchell, 1999). Critical Incident Stress Management programs are not available to students unless the student nurse(s) involved in the incident are invited by hospital administrators to attend, and schools of nursing often do not offer these types of debriefing programs.

### **Psychological Recovery and Post-Traumatic Growth**

Psychological recovery is a process that involves the establishment of safety, remembrance, mourning, and reconnection with ordinary life that results in a sustained feeling of being psychologically safe (Foli & Thompson, 2019). The goal of psychological recovery from trauma or crisis within healthcare organizations is “to build a resilient workforce who is prepared to process and heal from trauma and help others heal” (Foli, & Thompson, 2019, p. xxvi). Psychological recovery is a personal milestone that does not happen for all individuals who experience trauma, and reaching recovery is a personal determination. Beyond psychological recovery is the concept of post-traumatic growth, which is the ability to grow and make the event a positive learning experience

(Coleman, 2015; Foli & Thompson, 2019). Nineteenth century German philosopher Friedrich Nietzsche (1888) wrote in his book *Twilight of the Idols*: “Aus der Kriegsschule des Lebens...Was mich nicht umbringt, macht mich stärker,” which can be translated as “Out of life’s school of war” or “From life’s military school”... “what does not kill me makes me stronger” (Nietzsche, 1997, p. xv). Post-traumatic growth allows the opportunity to overcome a challenge with more than the individual had before (Foli & Thompson, 2019). Coleman defines post-traumatic growth as

improvement in psychological functioning following a traumatic experience, especially in the areas of self-evaluation (increased self-confidence and acceptance of personal limitations), personal relationships (increased compassion, appreciation of intimacy, and appreciation of friendships), and personal philosophy (replacement of materialistic outlook with deeper understanding of what matters in life. (Coleman, 2015, n. p.)

Li, Cao, Cao, and Liu (2015) associated moderate emotional intelligence and moderate psychological resilience with the most post-traumatic growth, suggesting that too much or too little emotional intelligence and psychological resilience are not associated with post-traumatic growth.

### **Support and Debriefing from Faculty**

Although students may feel prepared prior to witnessing a critical event, when the time comes, studies demonstrate that students often feel inadequate and fearful and prefer to have their clinical nurse educator with them to help them through the experience (Carson, 2010; Heise & Gilpin, 2016; Huang, Chang, Sun, & Ma, 2010; Parry, 2011). Debriefing can be done individually or in groups, and often helps with critical thinking, coping, and reflection. Clinical nurse educators play an important role in preparing, supporting, and debriefing students, and helping them through emotional difficulties



(Heise & Gilpin, 2016; Huang et al., 2010; Parry, 2011). A number of studies in a literature review by Alzayyat and Al-Gamal (2014) briefly mention student experiences with patient suffering or patient death, but none discuss how to prepare students for these types of events or how to support students through them as they are occurring (Burnard et al., 2008; Edwards, Burnard, Bennett, & Hebden, 2010; Jimenez, Navia-Osorio, & Diaz, 2010; Timmins & Kaliszer, 2002).

In a poignant study by Eifried (2003), student experiences with patient suffering were detailed along with the perceived support they were given. Students described feeling alone, not feeling prepared, feeling helpless and vulnerable, and intense feelings of loss. One student described how “a caring instructor unknowingly allowed a student to suffer” (Eifried, 2003, p. 61). A theme echoed by many students in the study was confiding in one another and wanting to be alone to gather their thoughts, and the clinical instructor rarely being involved. One passage that emphasized the problem of lack of faculty support stated that students

wanted to share their feelings of helplessness, sadness, and loneliness with others but seldom risked telling faculty or shedding tears. The vulnerability felt in the presence of suffering can be compounded by the fear of appearing inadequate in the presence of the clinical instructor. (Eifried, 2003, p. 63)

Students stated that they “sometimes felt abandoned in the clinical setting,” “felt there was nowhere to turn for comfort,” and wished they had instructors who said that it was okay to cry, fostered a support group within the clinical group, made them feel important, allowed them to talk about their experiences, and were present for them (Eifried, 2003, p. 65). They also desired knowledge about how to prepare themselves and their patients for death.

The same themes of fear of the unknown and desire for additional training and support were present in a qualitative study by Huang et al. (2010). In this study, 12 students were asked about their experiences with patient death, and many felt panic and feelings of being trapped and alone, wishing they had the support of their clinical instructor. Some had difficulty adjusting after witnessing patient death, and avoided situations where it could happen again, hindering their clinical learning (Huang et al., 2010). The authors emphasized the importance of being physically present during the death of a patient under a student's care, and that most students lack the coping mechanisms to handle psychological matters and provide for the patient's and family's needs (Huang et al., 2010). In a similar study of 33 nursing students, the clinical instructor was only present in 50% of patient death situations, and students described the experience as traumatic, voicing the desire for more discussion with their clinical instructor after the patient's death (Heise & Gilpin, 2016).

Clinical nurse educators and staff nurses are often not trained on how to help support students through emotionally distressing critical events, and do not know what to say or do to help students in these situations. Many do not fully understand their role and do not want to cross boundaries with students by being too involved. The clinical instructor may not feel it is appropriate to touch students or counsel them, and are unclear on where appropriate student/faculty boundaries are. The clinical setting provides unique and personal learning situations that are often intimate and emotional. Though in the classroom, physical boundaries are more defined, in the clinical setting, students describe a desire for closer relationships with their clinical faculty, and value a sense of connection (Owen & Zwahar-Castro, 2007; Zieber & Hagen, 2009). Lane and Corcoran

(2016) state that although to some degree, counseling may be appropriate; too much counseling may be inappropriate and problematic. The authors recommend that once the educator moves into a significant counseling role or the time involved becomes too consuming, additional resources be provided for the student outside the clinical setting (Lane & Corcoran, 2016).

Eifried (2003) suggests that clinical faculty begin by caring for their suffering students as they would care for suffering patients in their practice. Inclusion of a pedagogy of suffering, where students are able to have clinical experiences which provide activities devoted to learning about, discussing, and receiving support from their instructor and peers is essential. The author also encourages designating a space where students can retreat to and be alone in their feelings, encouraging reflective writing, and facilitating peer bonding (Eifried, 2003).

Dwyer and Revell (2015) emphasize that a gap exists between how students are taught to handle emotional challenges, and nurses' experiences upon entering practice as graduate nurses. Lack of education in this area may be a significant cause of STS, emotional labor (suppression of feelings in order to "promote a sense of caring in others"), and eventual burnout (Dwyer & Revell, 2015, p. 8). The authors note "every fifth nurse suffers from burnout at some point during their first three years of practice" and that emotional exhaustion was related to increased turnover in new nurses; therefore, it is essential that nurse educators prepare nurses for the demands they will face in clinical practice (Dwyer & Revell, 2015, p. 8). Nurses, as well as students, need to care for themselves in order to care for others. Getting enough sleep, regular exercise, personal time, family time, relaxation, meditation, good nutrition, engaging in non-work

activities, and work-family balance are suggested coping strategies (Rourke, 2007); however, student nurses, many of whom work, attend school, and have families, do not necessarily have the time or the ability to participate in these types of activities.

### **Pilot Study**

In the spring of 2018, I conducted a qualitative study exploring the lived experiences of clinical nurse educators who had supported students through critical events in the clinical setting. A purposive sample of four clinical faculty from two universities in Utah and one university in Oregon participated in this study. Clinical experience of the faculty included pediatrics, intensive care, labor and delivery, newborn intensive care, and trauma rehabilitation. Three participants were full-time faculty with 7-10 years of teaching experience, and the fourth participant was an adjunct instructor with two years of teaching experience.

During each interview, I asked questions regarding the faculty members' experiences with students in the clinical setting who have experienced critical events. I gathered data on what types of clinical settings these events occurred in, and asked about events leading up to the event, and details about the event including: a) how faculty members helped students process the event, and how faculty members helped support the student mentally and emotionally, b) how the faculty member thought the support was received, how helpful it was to the student, and what they would have done differently to better support the student, and c) how prepared the faculty member felt they were in supporting the student, and how they could have been better prepared to help in the student's psychological recovery after the event.

When asked about training, all four clinical nurse educators stated that they received no training on how to teach clinical education and were not taught how to help students through critical events. One participant stated that her university had developed a training program for adjunct clinical faculty, but the program had not yet been implemented. All four participants stated they were assigned a mentor upon hire, and that the mentor has been helpful in supporting them in their positions.

When asked about specific situations where students witnessed critical events, one participant described a student who discovered a patient not breathing and without a pulse. Rather than calling a code blue or finding staff or the clinical instructor to help, the student went to find another student to help verify assessment findings. Both students verified that the patient was not breathing and did not have a pulse, and both went to find a nurse. The nurse verified that the patient had passed away. The participant stated: “sure enough he had passed away, but it probably hadn’t been too long. But they were freaking out...they really couldn’t believe that he died...They were just shocked, I mean, just shocked.” In this case, after talking with the clinical instructor, the students helped support one another because they had experienced the event together and were able to recover from the event.

Another participant described an event where a code blue was called, and CPR and advanced life support were provided with the student in the room. The student immediately found the clinical instructor and the instructor narrated every step in the event so the student would understand what was happening. Regarding the student, the participant stated: “I wanted to make sure she was okay. So...I was there with her during the experience, and I kind of gave her directions as to what was going on, you know, that

they were getting the crash cart, and they were calling the doctors, so I was kind of telling about the process. And then we left the room, and I said, ‘are you okay?’ And I had her explain what was going on. Had I not been there, she would have just been shoved in a corner. They were completely ignoring her.” This clinical instructor debriefed the student after the event, and the student was able to cope with the event and did not suffer distress.

The third participant described a newborn delivery and resuscitation situation where the student was providing false reassurance to the family and the staff were getting upset with the student. The staff nurses called the clinical instructor, who had experience in the newborn intensive care unit (NICU) and newborn resuscitation, to come handle the situation. When the clinical instructor arrived, she realized that the student was behaving the way she was because she was experiencing a form of psychological trauma. The instructor thought to herself “*she’s* distraught, *she* doesn’t know what’s going on,” and realized the student needed time to talk about the situations, because she was comforting herself by trying to comfort the parents inappropriately. The instructor took the student to a private room where she and the hospital unit’s nurse educator were able to debrief with her. The instructor also followed up with this student by telephone later that night, and again the next day in class. She wanted to make sure the student didn’t have any long-term negative psychological consequences. She believes that because of this and the debriefing that the student received, the student was able to process the event and has “done well” ever since.

The fourth participant described the most poignant of the four scenarios. During her clinical rotation in the pediatric intensive care unit (PICU), a student found out that a patient was going to be removed from life support. The participant had extensive work

experience as a PICU nurse prior to becoming a nurse educator, and understood the emotional elements of such an event. The student wanted to stay and learn and watch the process, but the clinical instructor wanted to make sure the student would be okay both during the event and afterward. The instructor stated: “I pulled her out for like 30 minutes and talked to her first about how difficult it was going to be, and that she needed to take time to grieve.” The instructor knew this student’s personality, describing her as being an emotional person. She decided that it would be best to be “blunt,” and described to the student in detail what each step would be like:

I pretty much told her everything, and so I’ll say things like ‘the family could be really reticent about it, sometimes you need to have them hold the baby in order to connect and say their goodbyes, or they may not want to’...and then I tell her ‘and you’ll feel the same way, so I want you to make sure and understand that you’re gonna be emotional during, and that’s okay during it to cry with the family, but not cry for yourself.’ To cry with them, and how it’s okay to do. I told her...the infant will slow its breathing. Sometimes they’ll make really weird noises... the nurse will be pushing morphine faster towards the end to keep it gentle and comfortable so it’s not upsetting to the family, they want to make it as peaceful as possible.

She described to the student the rituals afterward, of wrapping the baby, making handprints and footprints, and preparing the body and bringing it to the morgue. “If she was gonna stay for the death she was gonna stay through the whole process.” The instructor stayed over an hour after the scheduled clinical time to be near the student if she needed her. She made sure the student had a support person at home to talk to, and then took her off the schedule for the next clinical shift to give her time to grieve. The participant believes that thorough preparation, and having a support person during the event, were two key factors in helping her student cope with the event. She also believes that debriefing after critical events is crucial in helping students cope with their emotions and process the meaning of the critical events.

Participants all felt that it was the clinical instructor's role to help support students through critical events. Instructors also emphasized how difficult it can be when instructors have a large number of students to cover each clinical shift and cannot be everywhere at once. One participant suggested emphasizing to the students in orientation how critical it is to call the clinical instructor if a critical event is happening. Two participants talked about how students need to be told that they shouldn't have to "tough it out:"

I think one of the basic things for faculty to know, because they might forget, they might think it's obvious that a student would call them if a patient was dying or something extreme was happening, but it's not always. So, to me, that's the number one thing to let students know.

Participants felt that the primary support person should be the clinical nurse educator, but that if the staff nurse wanted to participate, they would have no problem with that. Participants discussed how busy staff nurses can be during an event and how the focus of the staff nurse is often directed only at the patient involved.

All four of the participants described the students' desires to discuss the event with their peers. Some wanted their peers with them during the event, and some wanted to debrief with them afterward. All four participants also discussed the importance of the instructor debriefing with the student in post-clinical conference. One participant stated: "I still feel like that debriefing moment needs to happen, the talking about it needs to happen, and...they really seemed to want to talk to one another about it...so within praxis time, that's a good time for it to happen." Another participant took an opportunity in post-conference to educate about how to handle codes, what do not resuscitate (DNR) status means, and further educate on patient assessment during critical events.



Limitations of the study included the small sample size and limited geographic area. Results from the study indicate that clinical instructor pre-briefing should be done when possible, and that support during the event with detailed description of events and adequate debriefing and follow-up afterward help prevent psychological trauma. Also, though clinical nurse educators often teach in clinical areas where they do not have work experience, having work experience in the setting where the critical event occurs is very helpful in conveying experiential knowledge about critical events to the student.

### **Summary**

This chapter presented a review of the literature and a discussion of the current state of nursing science in relation to supporting students through critical events in the clinical setting. Chapter III will present information on methodology.

## **CHAPTER III**

### **METHODOLOGY**

This chapter presents the research methodology of the completed research study. The research design was chosen to best answer the research question and develop a theoretical explanation of the phenomenon of interest. This chapter will present a discussion of: 1) research design, 2) research methodology, 3) methods, 4) participants, 5) sampling, 6) recruitment, 7) data collection, 8) data analysis, and 9) protection of human subjects and other ethical considerations, and 10) trustworthiness.

#### **Research Design**

##### **Grounded Theory Qualitative Methodology**

A grounded theory approach was selected because of the lack of knowledge regarding how student nurses are prepared for critical events, how student nurses are debriefed and supported after critical events, how psychological trauma develops in student nurses who witness these events, and how student nurses reach psychological recovery after critical events. Grounded theory methodology was used to develop a theory and model to describe the relationship between student nurse support and psychological distress or trauma, and psychological recovery, after witnessing critical events in the clinical setting.

Grounded theory is a research methodology used when the investigator intends to describe, predict, or explain a phenomenon by creating a theory from data. Creation of

theory involves identifying concepts which describe observations. Relationships between concepts are then articulated. This enables the investigator to look at an issue through the perspective of each concept and its relationship to other concepts, developing a comprehensive explanation (Corbin & Strauss, 2015). In the case of psychological recovery from trauma, generation of theory is a tool that allows the investigator to describe the phenomenon, identify relationships between concepts to identify problems, and “take action to alter, contain, and change situations” (Corbin & Strauss, 2015, p. 11).

Glaser and Strauss published the seminal work on grounded theory in 1967 (Glaser & Strauss, 1967). The idea behind grounded theory is that investigators can derive theory from data, rather than using a pre-established theoretical framework to interpret data. “Generating a theory from data means that most hypotheses and concepts not only come from the data but are systematically worked out in relation to the data during the course of the research. Generating a theory involves a process of research” (Glaser & Strauss, 1967, p. 6). Because the investigator is not using a theoretical framework, creation of a hypothesis is not part of grounded theory research. Grounded theory involves strict focus on the data themselves, and theory may only be generated from the data. Any theory that is not directly supported by the data is unsupported and discarded.

**Symbolic interactionism.** Though grounded theory does not utilize an existing theoretical framework, the method itself is based on the sociological theory of symbolic interactionism, which focuses on meaning and interpretation of interpersonal interactions (Merriam & Tisdell, 2016). Human beings are exposed to symbols in the world (events, objects, situations), which they interpret and find meaning. These symbols are derived

from social interaction and are acted upon based on the meanings given to them. “The importance of symbolic interactionism to qualitative inquiry is its distinct emphasis on the importance of symbols and the interpretative processes that undergird interactions as fundamental to understanding human behavior” (Patton, 2015, p. 134).

The inquirer can understand human action only by first actively entering the setting or situation of the people being studied to see their particular definition of the situation, what they take into account, and how they interpret this information. (Schwandt, 2007, p. 284)

Herbert Blumer (1969) coined the term ‘Symbolic Interactionism,’ and described three tenets of the theory: 1) Human beings act on the meaning they have given something, 2) Human beings give meaning to things based on social interaction. The same thing/event/interaction could have different meanings for different people. And 3) The meanings we give things is not permanent, and can change over time based on new experiences or interpretations (Blumer, 1969). The lens of social interactionism was used to describe the process student nurses go through before an event, how they interpret the event and the meaning they give to the event (symbol), how that meaning shapes behavior and thoughts in the next phase, or post-event, factors involved in interpretation and meaning in the post-event phase, and, finally, how those meanings affect the phases of recovery. Examples of questions asked of the data through the lens of social interactionism included questions such as: How does the student interpret the event? How does the student interpret their role in the event? What meaning does the event have for the student? Does the meaning change over time? What factors influence the change of meaning? What is the faculty/staff influence on the student’s interpretation of events? And, how do students interpret similar events differently?

**Grounded theory types.** Four types of grounded theory methodology exist. The first, and original grounded theory methodology is Glaser and Strauss's method, known today as Classical Grounded Theory, which does not utilize prior knowledge, including prior literature or theory. In the 1980's and 1990's, Strauss collaborated with Juliet Corbin to create what is known as Straussian Grounded Theory, a methodology which allows for a thorough review of applicable literature prior to commencing a research study (Strauss & Corbin, 1990). Strauss and Corbin's new grounded theory approach is described as "a highly analytical and prescriptive framework for coding, designed to deduce theory from data systematically" (Kenny & Fourie, 2015, p. 4). In 2006, a third grounded theory approach was developed by Kathy Charmaz, known as Constructivist Grounded Theory. Charmaz's philosophy is that theory is not 'created' from data, rather, theory is constructed from data. Using constructivism, which factors what the investigator already believes, data are arranged in such a way that new knowledge is constructed from a combination of new data and prior knowledge (Charmaz, 2006). The fourth, and newest form of grounded theory methodology, Multi-Grounded Theory, was introduced in 2010 by Goldkuhl and Cronholm. This newest form of grounded theory allows the investigator to draw on current theories while analyzing data, allowing for the influence of existing data on new theory development (Goldkuhl & Cronholm, 2010). For this study, the Straussian Grounded Theory methodology was used.

**Straussian Grounded Theory.** Straussian Grounded Theory aims to *create* rather than *discover* a theory. Coding in Straussian Grounded Theory involves four coding stages- 1) open coding, 2) axial coding, 3) selective coding, and 4) final conditional matrix stage, within which the researcher can move back and forth in consecutive coding

sessions. Coding methods are discussed in detail in the Data Analysis section. Though critics may see the rigidity of Straussian Grounded Theory coding methods as excessive, Strauss and Corbin (1990) clarify that their coding method should be used flexibly and adapted to each unique circumstance (Kenny & Fourie, 2015). Strauss and Corbin (1990) state that the model assists the researcher to analyze data with systematic accuracy resulting in a “rich, tightly woven, explanatory theory that closely approximates the reality it represents” (p. 57).

Strauss and Corbin (1990) argue that the investigator’s previous experience and exposure to the literature benefits the research by revealing gaps in the literature, can become a secondary source of data, inspires questions, can guide theoretical sampling techniques, can be used for validation, and provides insight into theories and philosophical frameworks that already exist. The theorists warn, however, that too much focus on the literature can blind the researcher, and that previous works should be used to inform, rather than stifle the process (Kenny & Fourie, 2015).

### **Research Participants, Sampling, and Recruitment**

#### **Research Participants**

Participants in this study were current student nurses who had experienced critical events in the clinical setting during their time as a student that were considered to be traumatic to them. Inclusion criteria included: 1) current student nurse in a prelicensure Bachelor of Science in nursing (BSN) or Associate of Science in Nursing (ADN) program, and 2) witnessed a critical event in the clinical setting within the past year to year and a half. Participants were recruited from Weber State University in Ogden, Utah, The University of Utah, in Salt Lake City, Utah, and Brigham Young University, in

Provo, Utah. Universities were selected due to the large size of their nursing programs, their status as four-year universities, their proximity and access to Level One and Level Two Trauma Centers for clinical education, and their willingness to have students participate. The sample size was determined by saturation of the data and adequate description of the linkages between concepts, cohesion, and explanation for discrepant cases and counter-narratives. In grounded theory research, investigators look for as many incidents or events as possible to provide support for categories and concepts that are developed. Once the investigator “no longer finds new information that adds to an understanding of the category” the data are said to be saturated (Creswell & Poth, 2018, p. 318).

### **Sampling Method**

Purposive sampling, convenience sampling, and snowball sampling were used in order to find participants who met the inclusion criteria and access participants from a wide range of institutions. Theoretical sampling was used once categories were determined in order to help solidify findings related to categories and strengthen evidence for each category. Clinical and didactic faculty were introduced to the study and asked to distribute study materials to students. A study letter of invitation was also posted to a research board in the School of Nursing at the University of Utah. Students who felt they met the criteria, and had a desire to participate, contacted the investigator. Participants were also able to assist in recruiting other participants by inviting other students who met the study criteria. Students who participated in in-person interviews were given a copy of the recruitment letter and the investigator’s business card in case they knew of someone they thought might want to participate. Students who participated in distance technology

interviews were told that if they knew of anyone who might be interested in participating, they had permission to pass along the researcher's contact information. Participants identified themselves as meeting the criteria of witnessing a traumatic critical event in the clinical setting, and were chosen based on their ability to help the investigator gain a deeper understanding of their experiences with support through psychological trauma.

### **Recruitment of Participants**

After obtaining Institutional Review Board (IRB) approval, networking through email and personal communication commenced with faculty and administrators from schools of nursing within the chosen universities and colleges of nursing. Networking was also done through personal networks of faculty from the western United States. Clinical and didactic faculty members and administrators were asked to distribute a letter of invitation to all nursing students (See Appendix B). Interested students contacted the investigator by email. The investigator screened for eligibility. All interested students met eligibility criteria and were asked to complete the consent form, and then identify a time, date, and private location for the interview. Interviews took place either in-person, by telephone, or through the conferencing software Zoom (Zoom, 2019). Prior to the interview beginning, each participant received documentation that included a consent form and a description of the study (See Appendix C). Any questions were answered, and participants reviewed and signed the consent form. The estimated sample size was 10-15 student nurses. Actual sample size was 14 participants, and was determined by saturation of the data. Student nurses who participated in the study were current students from Weber State University, The University of Utah, and Brigham Young University in Utah.



These three universities are among the largest university-based nursing programs in Utah, and all are accredited schools of nursing.

## **Data Collection and Data Analysis**

### **Methods for Data Collection**

After obtaining permission from the University of Northern Colorado's Institutional Review Board (IRB), I contacted each university's IRB to obtain permission to conduct the study at each university. IRB approval was not required from each individual university, and the UNCO IRB approval was approved for use within each institution. Additional permission was granted from school of nursing directors and faculty prior to data collection. Informed consent was obtained prior to the start of the interviews.

**Format and setting.** Data collection through interviews was chosen because I was interested in past events, which are impossible to replicate. Merriam and Tisdell (2016) recommend interviews in this type of situation, which allows for data collection through conversation and recollection of information. "Interviewing is necessary when we cannot observe behavior, feelings, or how people interpret the world around them" (Merriam & Tisdell, 2016, p. 108). The setting for the study was in-person, telephone, or computer conferencing interviews.

**Data collection process.** A few days before each interview, I contacted each participant by email to verify that he or she would still be able to participate in the study (See Appendix D). One to two days before the interview, I sent a reminder by email (Appendix E) with instructions on the date and time of the interview, and the location in-person (building and room number) or telephone, or the Zoom invitation and link.

Interviews ranged from approximately 25-70 minutes. Interviews were semi-structured, allowing the participant to first share their experience, thoughts, and feelings, and also allowed for open-ended interview questions, some pre-prepared and some based on participants' responses. Four interviews were conducted in-person, eight through Zoom conferencing software (Zoom, 2019), and two by telephone. During fall 2019 and the beginning of spring 2020, participants chose which interview setting they were most comfortable with. In March 2020 until the conclusion of the study, participants were interviewed using Zoom software only, due to the Covid-19 pandemic and the need for social distancing.

All interviews were audio-recorded using either Apple Voice Memos software for iPhone (Apple, 2019), Zoom software (Zoom, 2019), or QuickTime Player audio recording software (QuickTime Player, 2019), or a combination of two methods as a backup in case of electronic failure. Notes were taken by the investigator during the interviews, also as a backup in case of electronic failure. During the interview, and immediately after, memos were hand-written as the investigator thought of themes, ideas, sketched relationships, or noted thoughts or additional research questions from each interview. The first two interviews were transcribed word-for-word by the investigator while listening to the audio file and typing the transcription using Microsoft Word 2019 for Mac OS software (Microsoft, 2019). Subsequent interviews were first transcribed using Trint AI transcription software (Trint, 2019), and then edited word-for-word by the investigator while listening to the recorded audio files, editing sentence structure and grammar, and correcting errors in order to create an accurate transcription of all interviews.

Interview questions focused on understanding how individuals experienced an event and the steps involved in the process. Creswell and Poth (2018) recommend asking about the steps in the process, how it unfolded, events central to the process, influences that caused the phenomenon to occur, strategies used during the process, and consequences that occurred because of the process. I concentrated on seven issues during each interview (See Appendix F), and added supplementary questions as appropriate. I asked questions regarding student nurses' experiences with critical events in the clinical setting. I gathered data on what types of clinical settings these events occurred in, and asked about events leading up to the event, and details about the event including: a) how students were prepared for such events, b) how students were supported through the events, c) how students were supported after the events, d) how faculty members and/or staff nurses helped students process the event and how faculty members helped support the student mentally and emotionally, e) how effective the support was to the student f) what the student wished faculty or staff would have done differently to better support the student, and g) how the event shaped the students' future clinical experiences and future career goals. I also gathered data on the student's overall thoughts on prevention and recovery from psychological trauma. After each interview was finished, I thanked the student for his/her time, and emailed each participant a thank you note for participating in the study with information on how to contact me if needed (see Appendix G) and a list of Student Health Centers with addresses and phone numbers for each university in the event that discussing the event evoked an emotional response in the days or weeks following the interview (See Appendix H).

## **Data Security and Data Handling**

Audio data were stored on the primary investigator's password-protected computer until it was transcribed. Once transcribed, transcriptions were printed and stored in a file within a locked safe, and electronic files will remain on the investigator's personal password-protected computer until the dissertation process is complete and then will be destroyed. The identity of the participants was protected in the transcripts by identifying each participant with an abbreviated identity that included the letter "P" for participant, and a number, for example: P1 (participant 1), P2 (participant 2), etc. The key linking participant names and abbreviated identities was kept on a paper form in a locked safe. Participants' abbreviated identities were also listed on signed consent forms to keep track of each participant and demonstrate that each participant gave consent prior to participating. The signed consent forms and the key were the only documents that had the participants' real names. The key will be destroyed once the dissertation process is complete. Signed consent forms and paper-related data including de-identified study-related materials will be kept in a locked safe for a period of three years as required.

## **Data Analysis Methods**

A grounded theory approach was chosen for this qualitative study. The purpose of this study was to better understand how students are prepared for critical events, how students are supported before, during, and after critical events, how students cope with psychological trauma, and for those who reach psychological recovery, how recovery occurs. Grounded theory aims to generate or discover a theory to explain, predict, or describe a phenomenon. In grounded theory, the primary outcome of a study is "a theory

with specific components: a central phenomenon, causal conditions, strategies, conditions and context, and consequences” (Creswell & Poth, 2018, p. 89).

In grounded theory methodology, data analysis consists of four phases: 1) open coding, 2) axial coding, 3) selective coding, and 4) final conditional matrix. During open coding, categories are created from similar data. In the open coding phase, the investigator identifies a single category from the list that is extensively discussed by the participants or seems to be central to the phenomenon of interest and positions the category as the central feature of the theory, also known as the central phenomenon or core category. Axial coding is the process of connecting categories by discovering ‘linkages’ between categories or concepts, and between the central phenomenon and other concepts within the developing theory. Finally, selective coding involves creating a ‘story’ that connects the concepts, ending with a set of theoretical propositions. During this last phase, a matrix can be created, which is a diagram that aids in visualizing connections within the theory (Creswell & Poth, 2018; Strauss & Corbin, 1990).

Analysis was done through the grounded theory constant comparisons method, where data are broken down to look for differences and similarities. Similarities within data were grouped to form categories that became potential concepts. Data that did not seem to fit were set aside to revisit later. I identified linkages between categories, and grouped concepts to help identify core categories, named ‘primary categories.’ The nature of the data did not lend itself to one core category; rather, many core categories were identified that fit different phases of the overall theory. “The core category describes in a few words what the researcher identifies as the major theme of the study” (Corbin & Strauss, 2015, p. 8) and “enables all other categories and concepts to be

integrated around it to form the theoretical explanation of why and how something happens” (Corbin & Strauss, 2015, p. 13). This last step is where theory development occurs (Corbin & Strauss, 2015).

Concepts that develop from grounded theory research emerge from data collected during the research process, and are not determined prior to data collection; therefore, data collection and data analysis occur simultaneously (Corbin & Strauss, 2015). For data analysis of the study, I performed an initial analysis as the interviews were occurring. During each interview, I took notes, known as *memoing*, and looked for commonalities in responses from each of the participants and compared and contrasted answers to questions (Kenny & Fourie, 2015). Second, I had a journal which contained field notes and a set of theoretical notes. The journal was used to record details of the interview process, what I noticed, how participants’ acted, the participant’s affect related to issues discussed, and mood and emotions noted during the interview. The journal was also used for theoretical notes which outlined my thought process as I analyzed the data. Finally, I transcribed the interviews as soon as possible and read each interview multiple times while performing content analysis. Because interviews were transcribed electronically and checked manually, I was able to re-listen to each interview multiple times, allowing for more time to analyze the data. Notes were taken using the “review” feature of Microsoft Word (Microsoft, 2019), and notes were compared to memos and previous data.

After the first few interviews, each interview influenced questions that were asked in subsequent interviews. According to Corbin and Strauss (2015), “After initial data are collected, the researcher analyzes that data, and the concepts derived from the analysis

form the basis for the subsequent data collection” (p. 7). Throughout the research study, data collection and analysis occurred simultaneously, and as I read and re-read each transcript, categories of data were formed and re-formed as connections emerged within the data. I paid particular attention to the impact the mode of interview (telephone, in-person, or computer conference) had on the data I collected by noting the participants’ willingness to share rich details and answer questions with depth. There did not appear to be an influence of the mode of interview on data collected.

The 5<sup>th</sup>-9<sup>th</sup> interviews occurred within a period of three days and included over four hours of driving time between interviews. The 4<sup>th</sup> interview occurred only a couple of days before the 5<sup>th</sup> interview. Because of this, data became overwhelming and time was not available to analyze data between each interview. After the 10<sup>th</sup> interview, I stopped data collection to allow time for thorough data analysis. Data collection continued several weeks later after much reflection and analysis. Primary and secondary categories were determined. An initial draft of the theory and a model were created, and interviews continued in order to test whether additional data fit within the theory. Patterns were immediately recognized. Interviews continued until saturation was reached and I no longer discovered new information from participants. Several more drafts of the theoretical model were sketched until the categories and connections accurately reflected the data. The final model was compared to the data and was found to be an accurate representation of phenomena and how primary categories and secondary categories related to one another.

**Rigor.** Reliability demonstrates internal consistency in study methods and study tools. In qualitative research, validity strategies are procedures used to demonstrate the

accuracy of the research findings, and whether the findings were influenced by the investigator or were determined strictly from the data (Creswell, 2014). Criteria for assessing qualitative research is often expressed through credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985).

Rigor was achieved by reviewing audio recordings and notes to verify participant statements. Adequate sample size to reach saturation was obtained. Triangulation was done through a) full disclosure of my researcher's stance, b) comparing data with field notes and memos, c) comparing data to the literature, and d) reporting all data using direct quotes and thick rich description. I also attempted to triangulate data through member checks; however, participants who were asked did not respond. Journaling was done throughout the study, and an audit trail was used. Findings were reviewed several times throughout the study with my research advisor, who read all of the de-identified transcripts.

**Bracketing.** Alfred Schultz (1899-1956) developed the idea of bracketing, or setting aside one's own thoughts, feelings, experiences, and assumptions in order to concentrate on the phenomenon of the participant and how the experience is/was constructed. The approach was influenced by Husserl, who believed that perception and thought should be suspended in order to investigate phenomena without assumption (Schwandt, 2007). Giorgi (2009) sees bracketing as not letting past knowledge be engaged while attempting to explore a phenomenon, yet not forgetting what has been experienced personally. In this study, I made every effort to not influence participant responses. Questions were asked without suggestive tone or language that assumed a specific answer. Epoche was employed to recognize any bias, assumptions, expectations,



or judgement that might influence analysis of data. A journal of bracketing and epoche thoughts was kept in order to improve interviewing technique and assist in data analysis. The journal included personal thoughts and feelings about participant responses that might have a negative influence on me, personally, such as graphic stories of events that participants experienced, or possible personal trauma participants felt. I tried to be aware of personal emotions that arose, as well as emotions that arose in participants as they shared personal stories, and reflected on how those emotions influenced data analysis and study results.

### **Ethical Considerations**

“Researchers need to anticipate the ethical issues that may arise during their studies” (Creswell, 2014, p. 92). Researchers need to protect their participants, develop trust, promote integrity, protect the integrity of the institution(s) affiliated with the research, and have plans in place to help navigate ethical issues that may develop before, during, and after the course of the study. Prior to conducting the study, investigators must examine institutional and/or association standards, seek college or university approval, gain local permission from the research site, gain permission from participants, and negotiate authorship for publication manuscripts (Creswell, 2014).

Research questions should be those that will benefit participants. The purpose of the study was disclosed, and participants were consented of their own free will. The investigator respected the traditions and cultures of the participants and was sensitive to vulnerable populations. The research site was disrupted as little as possible, and participants and research sites were treated with respect throughout the study. Participants were not deceived, and unnecessary or harmful information was not collected. When

writing the dissertation, care was taken to respect the privacy and anonymity of participants, and the investigator avoided disclosing information that would harm participants (Creswell, 2014).

In all interviews, I took measures to develop an atmosphere of mutual trust. Belief systems may have differed between myself and the participants, and dignity and respect were maintained. All information was gathered without judgment (Corbin & Strauss, 2015).

### **Risks, Discomforts, and Benefits to Participants**

Risks to participants were minimal, but discomfort did arise as some participants recalled emotional events. I reassured all participants that interviews would take place in a private setting of their choosing, that only the researcher and the dissertation chairperson would have access to data collected, and anonymity of participants would be maintained. Participants were also informed that they could end the interview at any point in time without consequence.

During the interview, I paid attention to signs of distress from participants. Crying is a natural reaction to discussing critical events, and some participants cried during their interviews. As planned, if participants displayed extreme anxiety, fear, panic, hyperventilation, signs of emotional shock or acute stress such as confusion or detachment, oversensitivity reactions, sobbing, excessive sweating, increased heart rate, nausea, or severe headaches, I would have stopped the interview and allowed the participant time to decide whether to continue, talk with the student and reassure them. If signs were concerning, I would have referred the student to the student health center and if needed, I would have walked with the student to the student health center to ensure the

student was checked in and seen by a medical professional (See Appendix H). No student displayed extreme distress during interviews, and other than short bouts of crying, only lasting a minute or two, participants were in generally good spirits during interviews and were appreciative of the opportunity to share their stories. No participants asked to stop the interview.

Benefits to participants included the opportunity to reflect on personal experiences and how the experiences affected them and their future decisions in practice. Reflection brought additional meaning to participants as they explored the phenomenon in depth, and participants benefitted from the knowledge that the information provided may help future student nurses who experience critical events in the clinical setting.

### **Protection of Human Subjects**

The study was reviewed by the Institutional Review Board (IRB) at the University of Northern Colorado, and the study was conducted only after approval by the IRB. Participants received copies of IRB documents and consent forms, and participated on a voluntary basis. Participants were reminded that they may withdraw consent at any time and withdraw from the study at will. Participants were identified only by numerical code, and all research data were protected on an encrypted document on a password-protected computer, and paper documents were kept in a locked safe.

### **Measures to Ensure Trustworthiness**

Credibility was demonstrated by attempting to accurately describe the experiences of participants in the study to ensure internal validity. Triangulation through emailed documents from participants and additional supplemental materials, such as websites, curriculum, student assignments, and videos were used to help ensure credibility. The

dissertation committee chairperson acted as an external peer auditor by reviewing transcripts and notes to determine whether conclusions were supported by the data. Triangulation, using multiple sources of data to corroborate themes, was used to compare findings to the literature.

Transferability was demonstrated by using thick, rich descriptions with details that helped the findings be more applicable to other situations, as in external validity. Dependability was demonstrated by keeping audit trails and journaling the research process and all decisions made, as well as bracketing journals. Audit trails were created. Confirmability, or objectivity, was demonstrated by constant exploration of personal experiences, thoughts, feelings, judgments, and biases, in order to not influence the participants or the findings.

### **Summary**

This chapter provided information on research design, methodology, and the purpose of the study. Sampling methods and recruitment were discussed, as well as data collection and analysis procedures and methods for ensuring validity and reliability. Ethical considerations were explored, including risks, discomforts, and benefits to participants, protection of human subjects, and methods for ensuring trustworthiness. Chapter IV will describe coding and will introduce the proposed theory and model.

**CHAPTER IV**  
**ANALYSIS AND RESULTS**

**Procedural Summary**

**Participant Details and Contributions**

Participants were undergraduate nursing students from three institutions, who shared experiences from four schools of nursing in northern Utah. Participants were current students from Brigham Young University (four participants), The University of Utah (three participants), and Weber State University (seven students). One participant from Weber State University detailed an experience as a student the semester prior while attending Davis Technology College's practical nurse program. I will first introduce each school of nursing, and then each participant. Participants were numbered according to the order in which they were interviewed.

**Schools of Nursing.** Brigham Young University and The University of Utah's Schools of Nursing are four-year baccalaureate-only programs, without an associate degree option. Students graduate after two years of undergraduate prerequisites and two years of nursing school with a Bachelor of Science in Nursing Degree (BSN), and capstone is completed during the final semester of senior year.

Weber State University's School of Nursing offers a two-year associate degree RN program, with an option to continue to the one-year RN to Bachelor of Science in Nursing (RN-BSN) program for a total of three years. Capstone is completed at the end

of year two during the RN program. Weber State University also offers a Practical Nurse to RN (PN-RN) program as a bridge to entry for students from other institutions in either an in-person or online format.

Davis Technology College's (DTC) School of Nursing is a one-year Licensed Practical Nurse (LPN) program with a bridge to Weber State University's LPN to RN (PN-RN) program. Students who begin in DTC's school of nursing continue their second year through Weber State University within their satellite program on DTC's campus, graduate with an associate degree RN through Weber State University, and have the option to apply to Weber State University's RN-BSN program. Capstone is completed at the end of the second year as an RN student through Weber State University's PN-RN program.

**Participant summaries.** In order to provide a background for data, participants will be introduced, including a brief summary of each participant's demographics, and experience in clinical. I interviewed 14 participants across an approximately four-month time period. Twelve participants were female and two male.

- Participant one was a female nursing student who had recently completed her capstone in the emergency room. During capstone, the student and her assigned nurse cared for an elderly man who presented with abdominal pain. The patient was assessed, and abdominal pain gradually worsened. Dilaudid and labetalol was started and the patient soon became unresponsive, and a code was called. The patient was unable to be revived, and died a short time later from a ruptured abdominal aortic aneurysm. (AAA).

- Participant two was a female nursing student in the fourth year of her program. During a clinical rotation at a cancer hospital, the student witnessed the death of a young wife to end-stage cancer. Her patient was actively passing throughout her shift, and she and her assigned nurse provided comfort cares and helped comfort the patient's family through the process.
- Participant three was a female student in the second year of her program. During a clinical rotation in the emergency room (ER), the student witnessed an adult male collapse from a cardiac arrhythmia, and was able to be revived. Later in the same shift, the student also cared for a patient with an active myocardial infarction (MI).
- Participant four was a female student in the third year of her program. During a clinical rotation on the Labor and Delivery unit, the student witnessed a newborn resuscitation. The student and her nurse helped care for the mother during the event.
- Participant five is a female student who had recently completed capstone. During her capstone experience on the Thoracic ICU, the student cared for a patient who, during a routine pacemaker wire replacement, suffered a medical error and hemorrhaged. The patient was placed on life support, declared brain dead, and during the shift support was withdrawn and the patient passed away.
- Participant six was a female student in the third year of her program. During a clinical rotation in the ER, a patient was flown emergently from out of state suffering from post-partum hemorrhage. The patient had used all of the blood products available at the sending hospital and was coding during transport. The

patient arrived unresponsive and still hemorrhaging, and an open thoracotomy and manual cardiac massage was performed. The student participated in medication and blood product administration during the event. The patient did not survive resuscitation attempts and died in the ER.

- Participant seven was a female student in the third year of her program who witnessed two critical events during a clinical day in the ER and another event during clinical on a Labor and Delivery unit. During her clinical rotation in the ER, the student witnessed a full code of an elderly woman whom efforts were stopped on when it was discovered that the patient's status was do not resuscitate (DNR) but had not been communicated. The student also witnessed a second code blue later in the shift when a patient was transported from another city after a motor vehicle accident (MVA) and coded in the ambulance. The student participated in chest compressions during both codes. Participant 7 also witnessed a crash cesarean section (c-section) during her Labor and Delivery clinical.
- Participant eight was a female student who had recently completed capstone. During her capstone in the Neuro Intensive Care Unit (ICU), the student cared for a patient who was exhibiting inconclusive neurological symptoms, making diagnosis difficult. The patient was later diagnosed with a brain attack (stroke) and the student and her nurse were able to administer interventional medication.
- Participant nine was a female student in the third year of her program. During a clinical rotation in the emergency room, a student from her college was admitted after he attempted suicide by hanging. In the ER, the student was in line to perform chest compressions, but the patient regained a pulse after advanced



cardiac life support (ACLS) measures were instituted. The patient was transferred to the ICU, but later was pronounced dead after full resuscitation attempts.

- Participant ten was a female student in the third year of her program who, during a study abroad clinical experience the year before, witnessed the death of a teenage patient in the emergency room who had been hit by a car. The student participated in chest compressions during the code.
- Participant eleven was a female student in the second year of her program. This participant had witnessed several emergencies in clinical, such as MI's. but felt that her work experience as a healthcare assistant (HCA) in the operating room (OR) of a Level 1 Trauma Center had affected her coping mechanisms. The student recounted experiences at work with organ harvests, patient death, trauma, limb amputation, hands in meat grinders, compound fractures, aortic dissection, and others.
- Participant twelve was a female student in the second year of her program, who witnessed two critical events during two clinical rotations in the first year. The first event was a withdrawal of care in the ICU. The student helped support and care for the patient in her final hours. The student later witnessed a rapid respiratory failure of an infant on a pediatrics rotation. A rapid response was called, and the patient further decompensated, so the patient was intubated, code blue was started, and Life Flight came to transport the patient to the Level 1 pediatric Trauma Center. The patient did not pass away and continued to receive care at the receiving hospital.

- Participant thirteen was a male student in the second year of the nursing program. During his first year of nursing school, this participant witnessed the rapid respiratory failure and code blue of a teenage patient in the ER. The patient was stabilized and transported to the pediatric Level 1 trauma center where he passed away shortly after arriving.
- Participant fourteen was a male student in his second semester of the first year of his program. During a rotation in the ICU, this student witnessed a rapid response and subsequent death of a well-known patient who had been cared for by multiple students in his cohort over a period of several weeks. During the code, the student participated in several rounds of chest compressions, and afterward participated in post-mortem care.

### **Coding and Theory Development**

Interviews resulted in nearly 150 pages of transcribed interview data, an additional 23 pages of student assignments, school of nursing curriculum, and student supplemental e-mails, and four videos from university curriculum, which I evaluated, analyzed, and interpreted using grounded theory methodology through the lens of social constructionism. It is hard to say that any researcher's interpretation of data is not influenced by the researchers' previous knowledge and understanding of a phenomenon; however, in this study, bracketing was done as much as possible in order to let the theory emerge from the data. I set aside preconceived ideas and thoughts and used the constant comparisons method (Corbin & Strauss, 2015) to continually compare data to the emerging theory and models in order to verify conclusions. Assumptions were checked against data, and models were worked and re-worked until a conclusion was formulated

that appeared to fit the overall categories and sub-categories, processes, and relationships from interview data. An articulation statement that summarized the model was created, as well as a detailed description of the theory. Data analysis and coding were completed in four steps: 1) primary open coding, 2) axial coding, 3) selective coding, and 4) final conditional matrix stage.

### **Primary Open Coding Procedure and Categories**

Data were analyzed using recommendations from Corbin and Strauss (2015), who stress that each person develops his or her own analysis methods, and what is important is remaining flexible and responsive. In order to fully envelop myself in the data, each transcript was reviewed multiple times, with a different intent in mind each time, and each interview was compared with other interviews using the constant comparisons method (Corbin & Strauss, 2015). The initial goal was to determine the most important messages each participant was conveying in order to identify major concepts and core categories, as well as potential influencing categories.

First, interviews were read and compared with the original audio recording in order to verify accuracy. Once transcripts were deemed accurate, they were re-read in order to re-visit the participants' experiences, feel what they felt, and "enter vicariously into the life of participants" without the intent to analyze meaning (Corbin & Strauss, 2015, p. 86). I then reflected on the overall ideas being expressed in each transcript, and noted major concepts that stood out. This initial analysis was done using hand-written notes, which were combined with original interview notes and memos and kept in a folder. As each subsequent interview was completed, earlier interviews were reviewed to determine whether concepts repeated. Based on this first analysis, interview data were

organized into eight categories for ease in finding data later in the analysis process: 1) participant thoughts/feelings/possible themes, 2) preparation, 3) during event, 4) after event, 5) support persons, 6) coping mechanisms, 7) additional risk factors for psychological trauma, 8) recommendations. This process continued until interview eight, when I felt a more in-depth approach was needed.

Next, transcripts were analyzed line by line in an inductive approach, starting again with the first transcript. Using Microsoft Word's (Microsoft, 2019) 'Review' feature, notes were taken with the investigator's thoughts and ideas, and responses were analyzed for meaning. Concepts that stood out most or were discussed most often were noted, and a list of potential core categories began to develop. As each transcript was analyzed, it was again compared to previous transcripts to determine whether certain concepts and connections were repeating. The same themes seemed to emerge, at which time I began sketching concepts and possible categories in order to determine connections. Interviews continued, and each interview was analyzed using the same three steps as previous interviews: 1) transcribing the interviews word for word for accuracy, 2) reviewing the interviews generally in order to determine the participants' meaning, and 3) a line-by-line approach to gain a more in-depth understanding and determine core concepts. A list of potential core categories, as well as influencing factors and recommendations was created after analyzing all 14 transcripts. Categories were then analyzed and organized into categories using two methods. First, I listed all themes from all interviews. This initial analysis resulted in 50 concepts (see Appendix I). Then, I quantified the number of times certain responses or themes were presented to determine

whether some themes were discussed more often than others. From there, I entered the axial coding phase, where categories began to form.

### **Axial Coding Procedure and Categories**

Using axial coding, I combined concepts into categories by discovering ‘linkages’ between concepts. I first analyzed concepts and additional topics in the data quantitatively, and found eight concepts to be discussed most often among participants: 1) Finding a Role/Role Conflict/Sense of Purpose, 2) Feelings of Stress, 3) Desire to Debrief/Importance of Immediate Debrief, 4) Relationship of Trust (or Lack of Trust) with Faculty/Staff, 5) Lack of Clinical Instructor Presence, 6) First Experience with Death, 7) Lack of Hospital Debrief, and 8) Risk Assessment/Risk for Trauma.

Upon review with my research advisor, and re-analysis, my focus changed from not only looking at which data were discussed most *often*, but which data were the most *important* and appeared to be over-arching themes. I was reminded that just because an event is stated often, that does not mean that it is the most relevant to the bigger picture. What is important in developing theory is stepping back and looking again at the overall themes that stand out as being the most influential overall.

Core categories (primary categories) were chosen based on importance and influence on the overall phenomenon, not necessarily on how often they were stated directly by participants. Metaphors and emotions, along with direct language were interpreted. Interviews were read through once again to verify conclusions. Upon deeper analysis of the data, including interview data, notes, memos, and supplementary materials, an edited list of primary categories emerged from participant interviews through analysis of meaning. Primary categories were those which were found in all, or

nearly all of participants' interview data. They represent the main themes of the research, and are presented in some form in each case, and include: 1) Relationship of Trust, 2) Preparation, 3) Finding a Role/Role Conflict, 4) Clinical Instructor/Staff Active Presence, 5) In-Event Stress Response, 6) Post-Event Stress Response, 7) Immediate Debrief, 8) The Aftermath, and 9) Coping/Resilience.

Once primary categories were determined, I used diagramming to look for secondary, or sub-categories (Birks & Mills, 2015). I printed on paper all 50 of the original primary coding concepts, and using a magnetic white board, I arranged each concept into like groups, attempting to create a visual image of how concepts relate to one another. Using the white board, I wrote general names for each primary category and placed related concepts underneath with magnets. From there, I combined concepts into over-arching themes, creating secondary categories. As additional validation of primary categories, all open-coding themes fit into one of the chosen primary categories. I, then, returned to the data to compare categories with the overall impressions from each interview. Using a separate Microsoft Word (Microsoft, 2019) document, I copied and pasted all interview data relating to each concept under each category. All 50 initial concepts were organized or combined into primary and secondary categories (see Appendix J).

Secondary categories that emerged from the data included: 1) Nursing Education/Knowledge, 2) Life Experience/Beliefs and Values, 3) Pre-Brief, 4) Clinical Instructor/Staff Emotional State/Actions, 5) Isolation, 6) Validation, 7) Risk Assessment, 8) Home Support System, and 9) Post-Event Growth. These categories were chosen as secondary because each one falls under one of the primary categories but is significant

enough to be an individual element of the theory. The chosen main concepts and secondary categories appeared to repeat throughout the data, validating the concepts. A discussion of the axial coding results, including primary and secondary categories, as well as sub-categories follows. Exact quotes from interviews are used throughout the discussion to reflect the first-person thoughts, ideas, and experiences of participants.

**Primary category 1: Relationship of trust.** Relationship of Trust was a concept that stood out to me as early as interview two. This category includes relationships of trust with clinical faculty and/or staff, and the importance of the development of a relationship prior to witnessing a critical event. There was an underlying sense that those in the study wanted a familiar person who they felt comfortable communicating with to be a part of their experience and help them through it. Trust relationships were described as faculty and staff who not only wanted the student to learn, but wanted the student to be mentally healthy, and were willing to take extra time with the student to do what was needed to make sure their mental health needs were met.

Many participants talked about feeling comfortable, or uncomfortable with their assigned support person during the event. Relationship of Trust did not necessarily have to be formed long before the event. Students were able to form trust relationships with staff they had met earlier in the day; however, most discussion of trust relationships depict a relationship that first developed in the classroom setting with faculty, and continued into the clinical setting. Relationship of Trust was demonstrated by actions such as being approachable, showing a caring nature, providing support, and words of comfort. Lack of trust developed from not being approachable, not showing interest in

the student, or anger or frustration with the student. One student described the impact the prior establishment of trust had on her experience:

...before then, she was always really comfortable to talk to. Whether it was stuff at home that was going on that was making things harder, or if we needed help, or had a question or anything like that. So, I was already comfortable talking to her by then, and got to know her a bit... having somebody there that I knew, just the fact that I knew someone that was there was really helpful...somebody that I had a trust relationship with beforehand...

Sharing personal experiences with students made faculty seem more relatable and approachable. Students who understood that their clinical instructors had also been through critical events, and had dealt with personal trauma, or had helped students through critical events helped build a trust relationship.

all of my professors, and that clinical instructor, too, are all outstanding, like the most amazing people I've ever met. And they worked really hard, especially in that conference and in previous semesters to be really supportive of us... they shared stories of when they would go through dealing with traumatic things, and stories of how they'd help students in the past, and to come to them

Faculty built Relationships of Trust throughout the semester by investing time in getting to know students personally. Students from one university described the effort faculty put into talking with students, asking how they were doing, checking in to see how they were coping with school, asking about stressors, and posting positive notes and messages.

they check in with us a lot...the professors care about us a lot. And you can't doubt that at all. And they'll do anything they can to help us...They go up to you in class before classes starting or during the breaks and they say, "how are you?"...And any professor, I guess, does it in their own way. But each one of them gets to know every single student in the cohort and were sixty people classes in our cohort...they're good at checking in with us, and even now with my clinical instructor, which I don't see very often, she's really good at checking in with us and sending us inspiring messages and making sure we're okay...each of them will always say in classes that they're there and they're available, and if we ever need help with anything that we can come to them...



Letting students know that faculty were available to talk also helped develop the trust relationship. Some participants felt intimidated by faculty, or vulnerable in approaching them. One participant emphasized this point by discussing how faculty need to establish early in the program that they are available and willing to talk by describing common student feelings: “Where *do* I go? I don't want to burden this person with my trouble...put on your big boy pants and go, this is nursing. You know what you signed up for... oh gosh, I'm not going to be a good nurse cause I get upset about these things.”

Faculty from one university urged students to return, even after graduation, for support if needed, stating: “we’re your team. This is your team. And always please come back if you’re ever struggling and you want support or help with anything. We are your team. We’re here for you.”

Relationship of Trust can be hindered by student perception. If faculty do not actively work to develop a Relationship of Trust, body language or other actions may be mis-perceived by students as faculty being un-approachable and un-supportive. One participant explained: “my professor was this older cowboy type, super gruff and rough...not like a super emotional person...not soft at all.” And another explained:

he had a lot of knowledge and experience, but he wasn't the most like, warm, touchy-feely person. And so, I guess I didn't feel like he would have been somebody I could go to, to like really just vent and decompress emotionally...just as far as like, “hey, man, like this hit me really hard. I'm having a hard time wrapping my head around this.

Relationship of Trust can also be broken by the staff’s or clinical instructor’s words and actions during clinical. One participant discussed a particularly hard time she had communicating her position to her clinical instructor, who was unsympathetic to her needs, and angry about the student’s failure to notify her when she decided to stay at the

bedside of a dying patient rather than attend post-conference. Because of this, the student did not approach the clinical instructor for post-event support, and no follow-up was provided after the event. The student stated: “after that, after meeting with her, I just cried. Literally just cried and listened to music and wrote down my experience in my journal (participant crying)...I also didn’t feel comfortable talking with her...I’ve only really told faculty that I felt that I could relate to, if that makes sense? I felt like with some of the faculty I didn’t really have that trust to tell them or feel open with them about it...” Another participant described the un-supportive pressure she felt to participate in skills she was not comfortable performing: “ it was like ‘I couldn't say ‘no’ kind of thing... because I didn't want to do it. I didn't want to participate in it.”

**Primary category 2: Preparation.** The next category that stood out early in the research process was that of preparation, and was a category that all participants discussed. Students often shared how they were or were not prepared to participate in or witness the critical event, and provided suggestions on what they wished they had learned prior to the event. The Preparation category includes the secondary categories of Nursing Education/Knowledge and Life Experience/Beliefs and Values.

Mental and emotional coping were concepts often discussed by participants regarding preparation. One participant stated: “They don’t try to just teach you how to pass the NCLEX, I feel like they really care about making us happy, healthy, nurses. Just good people. Well-rounded people, who are going to last a long time in the nursing force.” Students from one university received course content on psychological trauma in the clinical setting during the first year of nursing school. Unit content included videos

from prior nursing students who had witnessed traumatic events in clinical and how they coped, and a self-care module which included an assessment and resources.

I remember there was one student in particular that I think had a pediatric patient pass away, and was talking about that experience and how hard it was working through it. So, they had done some things prior, to show us, like, “hey, these things might happen in nursing school and there are resources.” And that student talked about those resources and what she did to work through it. And it's quite similar... to what I had experienced.

Most participants, however, desired more course content on coping and stress management, and other forms of mental and emotional preparation, and felt they were not adequately prepared to cope with what they experienced: “I think, probably the key focus... maybe not prevention, but maybe better strategies for coping with it versus just kind of “go deal with it on your own.”” Most participants wished they had been more prepared for how they would feel after the event, even days, weeks, and months later.

when emotions of death and dying are discussed, it's about “how do you help the patient cope? How do you help their family, their loved ones? How do you help *them* cope? What resources are available to *them*? How do you help *them* process what's happening?” There is not really a discussion of “how do you help *you* process? Being an active part in this?”...there's never really education on “Hey, you know, your emotions matter in this, too.

One participant felt very prepared by her clinical instructor due to a pre-clinical preparation course where she was prepared for what she might experience and received resources from faculty and staff:

They were like “if you have any questions, feel free to ask. You can call us. You can text us. We have these meetings after clinical. If you need more help, you can meet with us during office hours. We also have an onsite therapist and we can take you over there to meet them.” They had him come in and talk to us, too, about what his resources were and what help he could offer and everything like that. So, they made sure we knew we had a really good idea of what our part was at the clinical rotations, and if we needed extra help, what help was available before we jumped in and had to find out after the fact. They made sure we knew before going in what we had access to.

One point by a participant was particularly impactful regarding how faculty downplayed the possibility of witnessing a critical event in clinical, leading her to believe that she probably would never witness one:

We were told at the beginning of the semester, you know, “lots of students go into the semester *hoping*, and kind of *expecting* to see trauma, level one traumas and deaths and fights and all this stuff. They kind of expect to see that in third semester because you're in more acute settings.” And they told us to “be disappointed because you probably won't.” And I *did* see. I *saw* a level one trauma when I was in the emergency room, and I *saw* this death when I was in the ICU. And it like... so I wasn't expecting it at *all* because they told us *not* to. And so, I wasn't prepared for that kind of thing...it would have been nice to know that it *does* happen more often than probably what they think.

**Secondary category 1: Nursing education/knowledge.** Nursing

Education/Knowledge includes nursing education and nursing knowledge which develop within the School of Nursing, such as didactic course content, conferences and guest lecturers, and laboratory learning. The simulation laboratory (sim lab) was an often discussed method of preparation. Some participants who had participated in the sim lab prior to the event found it helpful. One student stated:

We had done some simulations of codes in our lab, and that was helpful in knowing what was happening... and the severity of the situation and all of that, so at least I could sit with his wife, and I didn't explain much to her, but at least I had a semblance of what was going on, and so hopefully I could be a calming presence next to her, I wasn't someone next to her just freaking out as much as she was.

However, most participants did not have the opportunity to participate in the sim lab prior to witnessing the critical event, or had not had a simulation experience similar to what they witnessed. Simulations were not always realistic enough to prepare students, and some felt unprepared for the differences in simulation and real-life trauma. One participant stated:

when they called a code, I was like, “I just did this in lab.” So, it definitely did help prepare me for what was going to happen and what I was going to see. But even in lab, it's like this, “boy, you did it. Yay! We got the patient back”... I walked into that code like, “yeah, we're going to do this and we're gonna get the patient back,” and then after five minutes I realized we might not get this patient back.” So, I was as prepared as they could make me, I knew what to expect in a code, but I was not prepared to not save the patient during this code.

Another stated:

I definitely feel like I would have been more prepared...at least mentally, not necessarily emotionally, but mentally, to understand...because I think in the moment I didn't understand what went wrong and why he died. Why he decompensated so quickly and why there was nothing else to do or what went wrong. But I think after the code simulations that we have later in the program, it just made more sense.

Many students were not prepared for the sights, sounds, and smells during a critical event. Course content did not adequately describe the changes in skin color and turgor, the flaccidity of the patient, the sound of bones cracking during resuscitation attempts, or the smells associated with real-life critical situations. Two participants recommended watching a video of a code prior to participating in one to better prepare them. One participant described his desire to have had more preparation for the differences between real-life versus classroom learning to help aid in coping and stress response:

... it stuck with me. And you know, as you're doing the compressions and things, you smell the feces and body fluids, they kind of get scrunched out of the patient, and you hear the sounds of the fluid in the lungs, and it is something that does kind of stick with you...and when it came to that moment where, you know, the doctor called time of death, there was just kind of like a...like a weird quiet in the room

Beyond simulation, didactic course content, such as death and dying, end of life nursing care, and general stress and coping content were other methods of preparation. Participants from two of the three universities received course content on secondary

traumatic stress, burnout, and compassion fatigue. Most participants described course content on death and dying and end of life care, including preparing the patient's body after death, and physical signs and symptoms of patients who are near death. According to one student: "we did have a class about cleaning the body and presenting it to the family and what things you should say or how you should act when you do experience those things," and another stated: "They had us do some modules about end of life care [ELNEC], end of life issues. Some students felt that death and dying content was effective preparation: "I think that just helped to put this perspective of what to expect with this type of field, that that's something we're going to witness more than we'd like to." And:

It was nice to have the expectation of what would happen to the patient or understanding that, oh, this pupil change means that they're pretty imminently dying, or this breathing change means that, or. Having an understanding of the physiological stuff so I could attend more to... I could focus more on how I felt, or doing the family interactions and talking to my nurse and talking to the providers and the rest of the care team.

Other participants did not find death and dying content helpful in preparing them for the event they witnessed. Many had forgotten the content by the time they witnessed the event, and some did not feel that the content was relevant to their situation.

you can't really mimic all of the irregular breathing and the apneas and the weird reflexes that people have when they're dying, and you can definitely simulate the family discussions and all of that. But I think when it actually comes time for someone to leave the earth, it's quite different. It's something that you really just need to experience.

**Secondary category 2: Life experience/beliefs and values.** Preparation begins even prior to entering nursing school through Life Experience, Beliefs and Values, including prior work experience, upbringing, religion and/or spiritual beliefs, and culture. Preparation includes cognitive, affective, and psychomotor learning, including practice

knowledge as well as mental preparation. Several participants discussed the impact that prior work experience had on their knowledge and mental preparation. For example, one participant was a school teacher and an Emergency Medical Technician (EMT) prior to entering nursing school. She has a past history with traumatic events, in both the school setting and the medical field.

between when I was a school teacher and then becoming a nurse, I had some stuff that came up... I was a teacher, I saw a lot of child abuse, and so that was really hard. And then as... I was an EMT before I went into nursing and I was at a EMT conference and ... I had a really close friend that had PTSD and TBI [traumatic brain injury] after, with military service. And so, we went to this conference together and he ended up having a full-on episode that I ended up tackling by myself and found out that if I came across anything similar later, I was not okay... with other things like with school and stuff, even to be a teacher, it can be very stressful and intense, and you can see things like the child abuse and other stuff that can be kind of rough. And so, it's things you learn from other life circumstances you come across beforehand.

One participant had a bachelor's degree in psychology and has worked in the mental health field. This experience prepared her for post-event psychological distress, and helped her recognize when she needed additional support from someone outside the school of nursing.

I worked at a residential psychiatric treatment program, and a residential substance abuse treatment program, and so those are both environments where talking about your feelings is very much on the forefront. And so, I wasn't as afraid to express what was going on inside to my support network.

Another participant worked as an OR technician, and believed that her exposure to trauma in her workplace helped mentally prepare her for critical events in the clinical setting by enhancing her coping mechanisms. This participant listed many traumas and emergent situations she has witnessed in the OR, and stated that nothing she has seen in clinical have been nearly as traumatic.

Upbringing and culture also had an impact on participants' preparation. One participant grew up in a 'rough household' where she gained resilience: "that's kind of how I'm able to check on myself and make sure that I'm okay, because I've learned over the years what I can and can't handle." Some participants grew up with parents in the medical field, and learned through example how to cope with critical events: "my parents deal with things differently than *I* do, but I've always understood and seen...how *they* take a patient passing very seriously...They may process it differently. But the degree of seriousness of it is always the same." One participant expressed how her Latino culture, as well as some Native American cultures, may hinder students' comfort level with asking for help: "for some ethnic minorities or just cultures it's very different for them to even go talk with the professor. They're always used to just staying in the background."

The final concept in this category discussed by many participants was that of religion and spiritual beliefs. Several participants identified God and religious beliefs as being methods for preparation for any impactful life event. Students discussed turning to God for comfort and coping, and also discussed how their faith helps them with perspective in matters of death and dying. One student described how her faith helped her cope with the death of a patient:

I have a good, at least I think I have a good faith foundation that has helps me get through it as well... I think that the thing that helped me most was just... knowing where I come from and where I'll go after I die. Knowing my faith foundation really helped me cope with the pass and the grief.

And another participant described how her religious beliefs affected her view of the afterlife and the patient's disposition, as well as her overall nursing practice:

I feel like part of it is my religious beliefs. Believing in an afterlife, believing that one day that family will be reunited, and this little baby will get to meet their mom. That gets me through, knowing that right now this is terrible. But just



believing that everything's going to be made okay one day, helps me to cope with all the horrible things we see. Without that knowledge, I honestly don't know if I could do nursing. I would say my religious beliefs are a large part of what helped me through that experience and through life experiences in general.

**Primary category 3: Finding a role/role conflict.** Finding a Role/Role Conflict was a pivotal point in the experience for participants. The desire to find one's place and find a role in a critical event was evident throughout most participants' accounts. Eleven of the fourteen participants discussed this category in some manner. Students approached each critical event differently, with some wanting to participate in direct care, some wanting to observe, and some wanting to instead stay with the family and provide emotional support to them as a caregiver. The decision about the role each student would take was not always the student's. Some students felt pressured into participating in a role they were uncomfortable with. Some students were able to state their concerns; however, not all were emotionally prepared enough to speak up. One participant explained: "I definitely felt pressured. I knew I wanted the experience, but it was my first time in the hospital. And I was like, "I don't know if I should do this."

Some participants described being excited to participate; however, for some, the reality of what was happening quickly set in. Some participants felt out of place, and not yet comfortable with performing tasks they had learned but had not yet performed, in such high-stakes situations. As one participant put it: "I felt sick to my stomach, and I was watching, and I felt like "I don't know if I can do that. I don't know if I'm prepared." And the moment of deciding, "I'm going to stay and see this through.'"

A sense of accountability and obligation was a theme expressed by some. Though not all students felt prepared to participate in critical events, some felt that their knowledge would provide extra help and benefit patient care, and they saw it as their duty

to participate. Some student do not feel comfortable participating in hands-on skills and interventions during critical events and feel more comfortable with patient family interaction. One participant decided that during the code she would sit with the wife of the patient and explain what was happening and provide emotional support:

...the code began, and people started chest compressions and I kind of went over to his wife to just stand next to her and comfort her is what I was trying to do... She was kind of just silently crying, and I gave her shoulder pats and shoulder rubs. I asked her if she was okay. I gave her some tissues. And I told her if she had any questions she could ask me.

Nursing is a caring profession, and students gain an appreciation of the value of having a caring person to help when experiencing stressful events. Empathy was expressed by many participants in phrases that emphasized wanting to comfort patients and families. One participant, when comforting a mother who had just delivered a baby that needed resuscitation, told the mother: “I think they’re doing everything they can to help your baby”...“she’s in good hands.” And told her what a good job she did. Another participant chose to stay late in clinical to provide emotional support to the family of a dying patient:

They just wanted someone to listen and to get their mind off of what’s actually happening in front of them. When she’s taking those final breaths, you could see, and we’re giving her Fentanyl, and it was just, they just wanted someone there to listen. And that’s what me and my nurse did when we were there.

**Primary category 4: Clinical instructor/staff active presence.** The term “active presence” was chosen to emphasize the difference between being in close proximity to the student, and actively being engaged with the student by providing emotional support, encouragement, education, and feedback. Students spoke about the impact of having someone by their side to help during the event, and the impact of being alone with no one to ask questions to or provide support. Data from this study demonstrate that the effect of

clinical instructor active presence and staff active presence are the same. The majority of participants (12 of 14) did not have a clinical instructor present during the event. For some, the clinical instructor was able to be present near the end, or after the event, but for others, the clinical instructor was either not available, did not know the event was occurring, or was not at the facility because the student was a capstone/precepting student. Precepting presents a unique challenge due to the nature of practicing without clinical instructor presence, and encouraging students to contact their supervising instructor after the event may provide additional comfort.

Clinical Instructor/Staff Active Presence aids in student understanding, especially when students have not yet learned content related to the event in class or lab. Often, students perceive appropriate actions as those seen on television and in movies, and do not understand why interventions differ from what is expected. By providing ongoing narrative of what is happening and rationale for actions, students are better able to connect theory with practice, and understand treatments and related outcomes. One participant who had not yet had critical care course content, and had not yet participated in the sim lab, witnessed a code and subsequent death of a patient in the ER. The student recounted:

I think a lot of the jargon, and even the medical terminology at that point in my career, I had no idea what that meant...he's like, "this is what I'm seeing. They're putting in chest tube because of this, or they're trying to give fluid boluses for this," or kind of explain that a little bit. But I didn't understand a lot of the medications and I didn't understand in my head... seeing medical shows or whatever, I'm like, "we're not shocking? And we're not defibrillating them? Why don't we do that?" Which obviously I understand now. But then I was like, "is he receiving all the care he could be? I don't know what else we could be doing."

Active presence of a clinical instructor or staff nurse helped instill confidence in participants, and provided students a support person to rely on for questions or concerns.

Without pressuring students, actively present faculty and/or staff can encourage students to participate where they feel comfortable. As one participant remembers: “She was the one that asked me if I would be comfortable drawing up a med. And he was like, “nope!!” she's like, “that's totally okay. We'll grab someone else.” One student felt that her clinical instructor helped her through performing skills during a code:

it helps to have somebody I knew there. And I could tell she was watching me and ready to help me...and didn't expect me to just guess my way through it at all, and was really good at making sure that we were competent. It was just kind of the confidence part we were working on that can make things intimidating like that... she was like, really, really encouraging. You know, she'd stand right by me and look directly at me and be like, “you got this!” and talked me through, and then “do this part next,” and “you're really good” and stuff like that. So, she was really encouraging and supportive and calm throughout that whole thing. And so that was really helpful for me

Another participant remembered her staff nurse building her confidence, talking her through procedures and explaining what was going on: “She [would] address any questions that I had...what I was comfortable doing or not comfortable doing...but also made sure that I knew that this wasn't all on me as far as my responsibility.” Active presence provides opportunities for student learning through feedback. Performing skills such as pushing ACLS medications, placing intravenous (IV) lines, administering blood products, and performing chest compressions are skills that students may or may not have learned in the skills lab prior to the event, and the critical event may be the student's first, or even second time performing these skills on a live patient. Because students are not yet fully competent with skills upon entering the clinical site, the added pressure of performing skills in high-stakes situations may require additional education and feedback. Participants in the study recalled feeling relieved that the clinical instructor or

staff nurse was present to coach them through new skills. As one participant, who performed chest compressions during a code, stated:

he would tell me, “go faster,” “go slower” or something if I wasn't doing my compressions fast enough. And the EMT's were really supportive while I was doing it, like teaching me how to feel pulses to know that you're doing good compressions.... It was nice that he was there to coach me through it.

Another participant recalled her staff nurse coaching her through how to interact with a grieving family:

Sometimes when we went out of the room, I would just ask her really quietly, “how was that?” (laughs). And she would say, “oh, this is good” or “you probably could have done it without this word... but I think they understood your intent”... she was very good at giving feedback.

Three students in this study had another student in the room with them who they were able to experience the event with, and who they relied on for support. Though the presence of other student nurses may not be enough support to aid in understanding the situation and care being provided, students are able to provide emotional support and help explain what they do understand. One student had another student present when she was involved in a resuscitation in the ER. She had not performed CPR before, and appreciated having another student present to help her through the process:

we were switching back and forth with CPR, and I hadn't ever done it on a person before, so, she kind of coached me through it the first few times and taught me where to put my hands. And obviously I'd had CPR training, but it just helped to have her there. And then whenever we'd switch out or anything, she would talk me through what she could.

Another student benefitted from having another student present during an ER code and subsequent patient death. The two students relied on one another for emotional support, and followed up with one another in the days following the event: “as we were walking out, like we double checked “Are you okay? Are we fine?” We gave each other

hugs. And then would check up with each other like a week or two after. And she is the one that followed up...that was good for us to go through together as well.”

**Secondary category 3: Pre-brief.** Pre-Brief includes any information given to the student immediately prior to the event about the patient, the patient’s condition, what the student may expect to see, any cares that may be necessary, equipment needed and how to use it, and any complications that may occur. The pre-briefing can be done one-on-one, or the student can be invited to participate in a group pre-briefing. Pre-brief is not always possible due to unexpected circumstances, and also may not be provided if staff are too busy or do not think to inform their assigned student nurse about upcoming events. Seven of the fourteen participants in this study were able to be pre-briefed in some manner prior to witnessing the event. Students benefitted from faculty and/or staff asking students how they cope, what they need from faculty and/or staff, and what questions students had prior to the event. Faculty and/or staff pre-briefing often involved educating the student on the steps involved in the care that was soon to be administered or withdrawn. The goal of pre-briefing is to prepare the student for what to expect; however, due to the unpredictable nature of critical events, often the event unfolds differently than what was anticipated. One nurse remembered the pre-brief that occurred prior to her patient being withdrawn from life-support:

my nurse said, “if they decide to withdraw life support, this is how it's going to go. And it'll probably be a little bit before she passes once they take her off the ventilator, and then we'll... let the family have their time. And then once she passes they'll come and let us know. And then none of that happened the way that she said, just because the family decided that they didn't want to be there. And then everything happened so fast. And so... she tried. She did her best. But it didn't happen like either of us were expecting

Orienting students to the room the event will occur in, as well as the equipment that may be used and where to find it, is another element of pre-briefing:

The ambulance called when they were two minutes out. So, the nurse took me into the trauma room, and she was trying to give me a crash course of where everything was in case they needed me to hand them something. But I mean, I was already anxious as soon as the phone rang, I was like “Oh, what’s gonna happen?”

**Primary category 5: In-event stress response.** As demonstrated in the review of the literature, critical events can create feelings of stress including emotional “shock” or acute stress, disbelief, anxiety, fear, anger, helplessness, and overwhelm. These feelings and emotions can occur due to a variety of factors, which will be discussed in the Selective Coding section. In this study, twelve of the fourteen participants discussed the feelings of stress they felt during the critical event; however, for one participant, the stress did not come until afterward. For that student, the experience of providing care for a dying young woman and her family was seen as a privilege, and it was not until afterward that the student felt sadness, anger, and stress and needed emotional support. Post-Event Stress Response will be discussed in Primary Category 6.

The majority of participants experienced a feeling of initial emotional “shock” or acute distress. The initial acute distress was related to a variety of factors, such excitement (“we just learned about this. This is so exciting!” (laughs) I ran out of the room... and then I realized someone is dying, this is less than exciting”), the critical nature of what was occurring (“they put him into one of the trauma rooms and they asked his name and almost like instantaneously he just crashed. I just watched his eyes roll back, and they started CPR...all hell broke loose”), or the realization that someone was critically ill and at risk for dying (“I almost didn't know how to react. It was... definitely

a lot of like, “wow, this is just very new.” And then I think I had to process it afterwards because she actually did flatline right as the shift ended”). Students also expressed feelings of inadequacy due to being a novice and not knowing what to do: “It was kind of nerve wracking for me just because I’m a new nurse. I was still a student at the time. And so, I just didn’t know exactly what to do in that situation.”

One student described how the initial fear made her want to leave the room and not participate:

I got caught up in this moment of I felt like I should go. Because before it happened...I tried to mentally prepare myself for it. And I just felt kind of sick and a little bit dizzy as I was watching everything happen, and I was worried that I wouldn't be strong enough to do compressions.

One of the biggest causes of acute distress for students was the physical appearance of the patient:

When I actually saw her and did all the assessments, I was kind of shocked because she was really puffy all over. And so, I could kind of tell that wasn't how she normally looked. And so, it was.... I felt a little uncomfortable looking at her. Especially when I would do the pupil checks, because eventually her pupils did dilate quite a bit. And so, seeing that change for myself and seeing the shadow, a little bit of mottling on her skin as well. And some of the things called purpura? Yeah, it's just a bunch like purple dots... it was a picture that I hadn't really seen before. But I felt like this person was very sick. And this is what I think... this is what people look like when they're close to dying or they're pretty much already there.

Another student recounted:

I think I didn't expect the amount of blood that I saw. I didn't feel like I was going to pass out or anything, which was good, because that's one less thing to worry about. But it was overwhelming at first. And I had to tell myself to just breathe, to get through it and make sure that I was being an asset instead of on the floor passed out.

Anxiety, fear, emotional “shock” or acute distress, overwhelm, sadness, lack of control, and helplessness were common In-Event Stress Responses among participants.



Students described feeling overwhelmed by the potential that the patient would not survive the event. One participant experienced extreme anxiety and was not able to concentrate in order to provide cares. She felt panic and helplessness as resuscitation efforts stopped, and the patient was declared dead:

we got her heart beat back twice during the code. But after twenty-six minutes, they had even gone as far as cutting open her side to manually pump her heart. After 26 minutes they called it. Even when they did, I was like, “What are you doing?” Like, “why are we giving up on this woman?”

The fear and sadness of the patient’s family and friends was sometimes overwhelming for participants, who empathized with the situation of the patients’ loved ones. One participant described how difficult it was to hear the patient’s wife say over and over during the code “do everything,” only to have the patient pass away. One student who witnessed the death of a teenage boy in the ER described the range of emotions he felt during the event, including concern, sadness, and anxiety. Another participant described a similar range of emotions:

It was a lot for sure. I definitely felt sad. I definitely felt sad and pretty angry for the family... it was almost like a helpless anger. It was like, “oh, there's nothing we can do now.” And it's like, all of the things that could have been done were done... it felt like it was very much out of my control. And so, all I could do was talk to family, help them sort out their own emotions.

An unexpected occurrence in several participant accounts was that of identifying with the patient, and having to control one’s own emotions due to the similarity of the patient’s situation to a personal situation, the patient being a similar age to the student, or the close appearance of the patient to a family member or friend. Students were often impacted more when they related on a personal level with the patient. One student described the patient looking much like her husband, which made the situation more emotionally difficult:

I remember looking at the young man who's about the same height as my husband. And like body type. And that kind of shocked me a little bit... and started thinking... and looking at how deep... it just looked...it didn't look real to me, like the compressions in the chest going up and down. And I had this like weird moment where I thought, like, "I can't do this. Maybe I should walk out. This is really weird and hard."

Another student recently experienced the passing of her grandfather, whose experience reminded her of the patient she was assigned to care for:

it was kind of it was an interesting experience for me because it was like three weeks after my grandpa had died and she was the *same* age as my grandpa, and she grew up in the *same* area. She'd been shipped from another hospital so that she could get acute care... so, it kind of made it more of a personal day. Less of a professional day... when the family decided to withdraw support, that's when it got a little personal.

**Secondary category 4: Clinical instructor/staff emotional state/actions.**

Faculty/Staff Emotional State/Actions is a secondary category that emerged from the primary categories of In-Event Stress Response and Post-Event Stress Response due to the impact on the overall theory and the frequency in which it was discussed. Faculty and staff actions and reactions during and after critical events can influence the student's in-event stress response. For participants in this study, when staff became anxious, students often became anxious ("they kind of started panicking. And it made me feel stress"), and when staff or faculty presented a calm demeanor, students were better able to calm their nerves and think more clearly:

It had the potential to get really stressful and crazy really quick, and I would start to get really nervous and look around and be like, "Oh, this is scary. Are we panicking? Are we panicking?" And then I see everybody else and that they were all calm and fine and I'm like, "Okay. It's fine. We're good." And that helps to kind of stave that kind of feeling off early on...they were able to handle it really well. So, that was super helpful for me because it tends to be when everyone else around me starts freaking out, I freak out too.

Clinical Instructor/Staff Emotional State/Actions also helped participants cope with personal emotions after the critical event by showing students that it was okay to be sad, and it was okay to grieve. One student witnessed the medical staff's sadness and grief during a hospital debriefing. The student had been "toughing it out" and "pushing through," and saw, through staff reactions, that it was okay for her to stop and process her emotions. She described watching seasoned nurses cry, and how touched she was that even though the staff did not know the patient personally, the event had a major impact on them emotionally. Another participant witnessed staff supporting one another after the death of a patient on the unit. Staff checked in with one another, and asked if others were okay or needed time off the unit to process:

I thought it was really cool that everybody that was there on the unit was kind of like looking out for each other. They were going and giving hugs or pats on the back. "Hey, are you okay?" You know, "you need to take five? You want me to watch your patients for a minute?" There was a real- A caring nature amongst all the floor staff...people that needed to take little breaks or go step off the floor and say a prayer, whatever they needed to do. Everyone on the floor, the charge nurses, the techs, the other floor nurses were very respectful of making sure everybody was in a good place emotionally, but also in a good place to provide care to the other patients on the unit too. And so, I think my takeaways from that were, you know, regardless of your experience level or what your participation level may be. The emotionality of it, I think is inevitable.

**Primary category 6: Post-event stress response.** Post-Event Stress Response encompasses the thoughts, feelings, and emotions of the post-event period. This period begins as soon as the critical event ends, and continues until the student returns home. Thirteen of the fourteen participants discussed post-event feelings such as acute distress, disbelief, not having time to process, being uncomfortable, time slowing down, mental and physical exhaustion, self-blame, guilt, regret and remorse, second-guessing, anger, frustration, and sadness. Only one participant did not experience Post-Event Stress

Response, which she attributed to the extensive number of traumatic events she has witnessed in her career, and will be discussed more in the Coping/Resilience category. From this category, two secondary categories emerged which were determined to be of significance: Isolation, and Validation.

Several participants described second-guessing their actions, and obsessing over whether they provided the correct care, or whether they could have done something different to contribute to a better patient outcome. Guilt often followed. One participant expressed his thoughts related to these feelings perfectly:

I remember that drive home just...keeping the radio turned off and just kind of reflecting and going through the scenario in my mind, like over and over, like, "Okay. Where could there have been a breakdown? Where could something have gone wrong that might have contributed to the outcome?" And I remember thinking to myself, like, "What? No, everything was textbook. And [the healthcare organization] they have algorithms for algorithms. I think it's a very well-oiled machine. And I think it was difficult on that car ride to kind of process..." "Okay, everything was done exactly the way it should have been, so, my gosh...why did this outcome happen?"

Some students expressed wanting to 'tough it out' and 'push through' after the event because they did not want to appear as though they could not handle the post-event emotions. Students sometimes have the perception that because they chose this profession, they should not be affected negatively by what happens during patient care. One participant stated: "throughout the day it was just this feeling of, 'well, this is nursing.' Like, 'I just have to keep going.' And I kept telling myself, 'I'm fine, let's just push through it.'" I had other patients to take care of... I got to take care of him. That's fine. This happened." Yet others may have an understanding that it is okay to feel sadness, anger, and a range of different emotions after witnessing patient death, injury, and illness. One participant expressed feelings of heartbreak and empathy regarding the

patient's family, and how they would cope with the death of their mother: "I think the saddest part for me was, she was a mom of five. She'd just given birth the day before, and her 14-year-old daughter kept trying to call the hospital to see how her mom was doing, and she was dead. So, it was heartbreaking." One student described her thoughts and feelings regarding removing life support from a patient:

when we were actually taking the drips away and turning down the sweep or turning down the settings on the ECMO, it felt a little bit robotic, like kind of... not an outer body experience, but just...I wasn't like a nurse in that situation. I was kind of like the facilitator for this family's grief and their time with their last moments with their loved one... I felt like my face was kind of paralyzed into this, like...I want to say grim? But just is a very like, serious face... I always feel like I couldn't move my face. It was a little weird...

I could describe it to you as though I were like a fly on the wall. But in my own person at that moment, I was just focusing on being very task oriented. So, I was like, "Do this. Okay, next, do this." So, I kind of had to coach myself through, like, give myself little commands, short sentences, and then when I was out of the room... I distinctly remember feeling a sort of heaviness when I was in that room. And then whenever I would literally cross the door frame, I already felt like I'm in a different place. I'm fine. Just capstone as normal. It's kind of weird.

For some, the post-event stress response is uncomfortable and negative. The appearance of the patient's injured or deceased body, the smell in the room, and the atmosphere are often unanticipated, and not discussed in the pre-clinical period. As one student stated: "when it came to that moment where the doctor called time of death, there was just kind of like a...like a weird quiet in the room. And everyone, I think was kind of like processing what had happened." One student described her feelings when she was left alone to clean up the patient's body: "when she left, I stopped because I was like, "this is... I can't do it." Yeah. So, it was...I would say it was a very disturbing experience. It was probably like two minutes, but it felt like a half hour."

Each student will feel differently after returning home, and students may not feel completely 'normal' for an extended period of time. Students' emotions may affect their ability to concentrate in school, and may affect home life. The impact of the event may be felt immediately, or it may not affect the student for days or weeks, as in this participant's experience: "The immediate days following weren't so bad, but once things calm down for the weekend, I was able to sit, that's when I really thought through all of it. And that was, that was hard." The event may impact students for months. This participant was still being affected months after the event she witnessed:

I would say throughout the rest of that semester it was kind of difficult for me to focus on other things, if people had brought it up. And there were several other students in my clinical group who, I want to say a month after my incident happened, there was like three or four of them that were on code, and I think they were different nurses, I think, because they were so organized. So, when they started talking about it, I was still not okay, and that was a month later.

A few participants were still being affected by the event a year after it occurred. These types of events can have long-lasting effects on students, and have the potential to cause psychological trauma if students are not prepared and do not receive the needed support. One student had a crisis experience after witnessing the death of a young man in an emergency room during a study abroad experience. After the event, the student experienced suicidal thoughts and became withdrawn, no longer wishing to participate in the healthcare setting:

I remember, right after it happened, kind of checking in with myself and saying, "okay, am I okay? Can I handle this? Am I doing all right?" And I like kind of felt a little bit numb. But also, the adrenaline was there from being part of a code. It was really interesting as a student. That first couple of days I felt totally fine. And then I was like, "that was really interesting. I want to have more experiences where I can be involved and help"...then a few days later...that other student that was with me, we were talking, and she just broke down, burst into tears and talked about her experience. And as soon as she did that, I cracked, and I sobbed. And it was really hard, especially reflecting back on those things. And when I think back

about it, I still hear the mom screaming his name over and over kind of a thing. So, I kind of broke down. And, I remember honestly, like this is hard to share, but a few weeks later we were doing a tour in more of Taiwan and these gorgeous mountains, and I remember having pretty severe suicidal thoughts. We were touring these gorges that were like super deep canyons. And I remember I couldn't let myself look over the side because the thought was there to jump. And that was kind of a new thing for me. And I didn't know how to cope with it. And it only lasted for a couple of days. And I never connected those two things together until my ICU semester. We had a talk about...I don't even know what they call it, but like a critical traumatic event where people can experience that or have a really hard time dealing with it. And it kind of connected in my head that those two were related...I think I felt normal once I got back home. And I mean, the study abroad was like four and a half weeks. And that was at the very beginning of the study abroad. And we had other clinical experiences that were...I didn't really like participating or watching, or observing, kind of thing for the rest of clinical, and I don't think I felt totally normal until I came back home.

Critical events are often more stressful than other patient care events because of the critical nature, but also because they are rarer, new, and unfamiliar. Though participants in this study witnessed a wide range of critical events such as newborn resuscitation, brain attack (stroke), respiratory failure, and emergent trauma, patient death was the most-discussed event among participants. Nine participants discussed eleven total witnessed deaths. Of the nine students, eight said it was their first experience witnessing patient death. Patient death can be a difficult event to witness for many reasons, but for some students, the impact of the care team giving their best effort, doing everything they can, and still having the patient pass away, can be very difficult to cope with.

it's kind of a surreal moment where it's like “wow...that just happened.” You know? And you're used to being able to, I think at least find some sort of an outcome where they go, “okay, they've gotten better to a point, or we've at least gotten them to the next hurdle,” versus “this wasn't the outcome that was supposed to happen.”

**Secondary category 5: Isolation.** Isolation is the period of time where the student realizes they have experienced something significant, perhaps even life-altering, and processes the event on their own. Isolation can begin post-event, but often begins after returning home when the student has more time to process and finds themselves outside the healthcare environment without faculty or staff to talk to. Though Isolation is not always a negative experience, most participants who discussed Isolation described feeling alone, having no one to turn to for support, having no one understand what they were going through, feeling like no one could relate, and often participants were not willing to reach out for help or become emotional in front of others.

Isolation can occur when the figurative weight of the often life-altering experience starts to become reality: “that night I went home, and I was like *wow*, this was a really, really tough thing to happen. For lack of sounding dramatic- somebody *died* right in front of me, and so it was *really* tough.” Isolation can also be literal. Some students may not have anyone at home to discuss the event with. For one participant, being away from home during study abroad increased the feelings of isolation due to not being able to talk with family who were in a different time zone. Many students feel like no one can relate to what they went through. The gravity of the event and the personal impact is something that can be difficult to relate to for someone who was not present to witness it first-hand, or who does not work in the medical field. One student called her parents for support, but felt they did not understand: “I tried to talk to my parents about it that night...So, they kind of were like, “oh, cool, that's awesome!” And I was like “no, it’s not.”...” Some felt isolated when they encountered other students who had experienced similar types of events, but did not appear to be impacted:



one of my good friends in the program, she was on a code and she was completely fine afterwards. But I think it was such a different circumstance. She was in ICU and there were several other students helping her, and the patient lived. And so, it was different. So, it's hard for me to see her dealing with it and be so fine. And I was like kind of struggling.

The additional restriction of patient confidentiality limits what students are allowed to share with those outside the healthcare setting. Some participants, afraid to violate privacy laws (Health Information Portability and Accountability Act [HIPPA], 1996), thought they were not able to let their home support system know that they went through something difficult and did not bring up the event at all, keeping all thoughts and feelings inside, further increasing Isolation: “it was hard not being able to talk to my husband about this. Just brought all my feelings up... because in HIPPA you can't really talk about stuff like that outside of an educational setting.”

For some, isolation can be caused by the student's hesitancy or unwillingness to become emotional in front of others. When students hide emotions, thoughts, or feelings, faculty and staff may not know that students are having a difficult time, and may not know they need support: “You know, you don't like to become irrational. Not irrational, but I guess emotional in front of people. At least I don't like to do that... so...” Another participant stated: “I was always in a dorm room with all these other nursing students or things like that where I didn't feel comfortable breaking down.”

**Secondary category 6: Validation.** Validation emerged as being significant to many of the participants. Participants voiced concern about wanting to know that they were normal, and what they were feeling was normal. Students wanted reassurance, and often did not know how to react, feel, process, or cope.

probably just other people recognizing that it was hard [helped with coping the most] because me myself, I didn't want to admit it was hard. So, when other

people told me that this is terrible, I'm so sorry. To me, recognizing that it was hard, helped me to then get through it, because if I didn't recognize the scope of it, how was I ever gonna heal from it? But having other people tell me, "hey, that was pretty bad." That helped me to work through it.

Talking about the event with faculty or other students was often a method for receiving validation: "I would just start talking about it like, and they were like "*That is horrible!*"... "This is good validation. Thank you." So, the more I talked about it, the more I became okay." Another participant stated: "I think that was helpful for me to explain what I saw. And to see that they were shocked just from hearing it. So, I was kind of validated, like "Okay, I'm not crazy." (laughs). And another participant discussed her experience with others in the healthcare field, helping her find comfort in her thoughts and feelings:

I expressed to my peers that this was really tough to go through and I was questioning my confidence, and one of the other students came up and said "you know, I've been an EMT for a while, and I've done chest compressions on a fair amount of people, and I understand what you're going through," and so it was nice to have that opportunity to open it up so that you could find support in other people.

One participant found validation during a nursing class where the instructor discussed critical events and the risk for psychological trauma. A video that was shown helped the student realize that she was not alone in her feelings:

I was like, "oh, my gosh, like, that's what I went through. That's what I felt... And I remember this was a debrief after clinical, and they talked about how students really struggle after this. And they showed that video. And they... it was honestly, a really great moment to just feel like, "okay, it wasn't just me that has ever felt like this." And a couple other students in the group mentioned like "I've been in a code. And I felt that way." I don't know. It was just like very satisfying and reassuring to know that students go through.

**Primary category 7: Immediate debrief.** As was evident in the review of the literature, debrief after trauma is an important factor in the recovery process; however,

the timing of the debrief, specifically Immediate Debrief, emerged as being significant in this study. Discussion of the event as soon as possible, either with the student's clinical instructor or with staff, was of importance to participants, even if it was only for a short time. Debrief offered participants the opportunity to ask questions, discuss feelings, review the events that occurred, and receive feedback, reassurance, and validation. One participant described the Immediate Debrief she and her staff nurse were able to have immediately after the event:

afterwards, after everything was said and done, we sat down and we debriefed through the whole thing, her and I. We talked about things that maybe we might have missed before in the initial assessment that could have led us to know that something was going to change...she sat down and we debriefed through the whole thing and different things that could have happened. What could have happened had we been a few minutes later or not gone in to recheck the baby so soon? Like, as soon as we did, instead of waiting the three hours before the next cares and whatever. There was a lot of things that we talked about, what could have happened, what should have happened, what did happen. And it was a real- it was a cool experience...I learned so much from that experience. I don't feel like that had any adverse problems that I had to cope with because the nurse that I was with as well, we debriefed the whole- like rest of the four hours. It was a lot. So, it was a good experience... It was a really traumatic experience, and I left feeling good...she just laid it all out beautifully...being able to debrief immediately, just talk about it right then and there as soon as it was over, because everything is still fresh in your mind- I think that made a big difference.

For one participant, a short debrief and explanation was greatly appreciated in the minutes immediately after the patient's death. The time the nurse took to explain what happened and answer questions helped fill the void until a full debrief with hospital staff and a debrief with her clinical instructor, could occur several hours later:

she took the time to step back with me and explain it, and brought me over to see where they'd cut into the patient side to manually pump the heart. Things like that. And then explained it to me. But during the code, there wasn't much of a chance because we were trying to save this patient. I remember the main thing she said was "we're going to debrief afterwards. We will have this chance to really talk about what happened." She wasn't expecting it to be four hours later. Normally it's within that hour of when it happened, but it was like "we will have a chance to

talk about this. Anything you need to talk about right now? Okay, let's get back. We still have other patients to take care of. Let's go"...there was a lot going on in that time period and then I had the chance to debrief with my instructor and then we debriefed as a group.

Debriefing with her clinical instructor was a very meaningful experience for one participant. Her instructor encouraged her to not 'tough it out' and helped her through the post-event stage: "... the main thing I remember is him saying is "you can take a step back, you can go and breathe. You can go take a walk, whatever you need to do to process this. It's okay that this impacts you. And that you need to just step back." During debrief with faculty and/or staff, resources for support can be provided to aid in coping.

He talked to me...that he was a resource, that the College of Nursing had resources, and that the counseling center on campus I could also go to, and just talked about the *importance* of talking about it, of reaching out to even my nursing students...not just internalizing it.

The effectiveness of debriefing was influenced by two factors: the immediacy of the debrief, and the adequacy of the debrief. Whether Immediate Debrief was possible or not, debriefing shortly after during the hospital debrief, or debriefing with the clinical instructor or staff nurse later in the shift was also of importance. Immediate debrief combined with one-on-one debrief was the most effective. One participant described how meaningful it was to be invited to the hospital debriefing and be treated as an equal amongst the rest of the staff:

we had all pretty much experienced it together. And some of them were pretty experienced with handling codes and the outcomes that would maybe occur. Or like that other nurse that I talked about where it was her first code too. I think everybody was affected by *that* code and *that* experience in *that* time on *that* day. And so, for all of us that were there, you know, that was a firsthand experience. We saw it. We touched it. We felt it. We smelled it. We experienced it. And so, I think processing it along with people that were right there with you was a huge help. And in that moment I didn't feel like I was treated like a student or like, you know, an outsider or a third party, like I was treated as "you were part of this code

team and we're just concerned about how you're doing and your processing as everyone else on this unit.” And so that was that was really helpful.

Hospital debriefing sessions also provide an opportunity to hear from multiple members of the healthcare team, not just the nurse. Students who were invited to hospital debriefings discussed the impact hearing from the physicians had on their ability to cope with patient outcomes: “when we sat down to talk, something he said was that “we do our best to do what we can. We don't always know what the outcome is going to be. But what matters is that we tried.” Another participant was comforted hearing that they did the best they could, and that no matter what they did, the patient would not have made it: “he goes, “we were rearranging deck chairs on the Titanic. There was nothing we could have done. We were handed a dead patient and were expected to do something.” One participant was not invited to the hospital debriefing and felt ignored after the event: “they all just huddled afterwards and kind of talked about it. But no one talked to me about it. They kind of didn't even acknowledge me the whole day except in the code.”

Post-clinical conference, or ‘post-conference’ is another venue for debriefing. Though not immediate, the post-conference allows the student to discuss the critical event within the healthcare setting with the clinical instructor, other student nurses, and any invited staff, such as chaplains, if desired. Post-conference is also a venue for learning, where the events of the day can be discussed, and additional education can occur. In some schools of nursing, mid-conference has replaced post-conference, occurring mid-day rather than at the end of the shift. Though mid-conference can be an effective method for teaching and discussing the events of the morning, one participant wished she had the opportunity to debrief as a group at the end of the day instead:

Mid-conferences were great because it got us all eating lunch. But I feel like post-conference, the debriefing part of it, I feel like that is something that we miss out on. Because the day hasn't finished yet when we go down for it. My first semester we had a post-conference. And I do feel like we were able to debrief more, and I really liked that... mentally, I feel like the debriefing is vital for student nurses. They need that until they can figure out ways to do it on their own. They need that guidance.

Participants expressed gratitude for the ability to discuss the event with their clinical group without violating patient privacy laws: "... it was good to have a place where we are allowed to do that because there is a lot with HIPPA and other stuff, where you kind of have to keep more of it to yourself. So, it helps having a group where if you need it to, you could share that." The choice to share the experience in post-conference should be the student's: "I chose to do it. They told me if I didn't feel comfortable, I didn't have to. But I feel like it's better to talk about stuff like this and not just hold onto it."

A participant who witnessed a post-partum hemorrhage and subsequent patient death did not feel ready to share what she witnessed in post-conference and only spoke for a short time, wanting instead to go home and process:

at post-conference my instructor was trying to get everyone to engage and he just kind of let me be and didn't really push that because he knew what I'd seen that day. I mean, I told everyone in clinical...we went through our days and I was like, "yeah, this is mine"...And by the end he was like, "Alright, are you guys ready to leave?" And I'm like "Please let me leave. I saw someone die today. I want to go home.

One clinical instructor took extra time one-on-one to debrief with the student after post-conference, and provided additional resources:

I talked about it during post conference. And then afterwards when everyone left, he kind of held me back and it was asking me if I was okay. He gave me his office number to come and talk to him about it or email him if I couldn't sleep at night or anything. But yeah, he was very helpful with it.

Though some participants were able to receive Immediate Debrief, many were not. Nine of the participants were not invited to the hospital debrief or were not provided a hospital debrief, and five participants did not receive any form of debriefing after the event. Lack of debrief can have a negative impact, as one participant stated: “I think the thing that was the most impactful was just report that I didn’t get after.” One participant explained that she wanted a debrief, but the staff did not think about it: “No one really acknowledged the codes. They were just like, “oh wow, my gosh, that morning was crazy.” And then they're like, “I have so many patients” and kind of just went right back into it.” For one participant, her staff nurse wanted to debrief, but there was not time. In many areas of healthcare, the high patient load, quick turnover, or ongoing patient needs hinder debriefing due to the demand of the unit.

She said, “you know, if you need to take a minute go right ahead. There's breakrooms right there, here’s the code.” She very much wanted me to have that time to debrief, but then we were told we were getting another admit, so we had to get the room set up and it just...the time went... it probably would’ve been better had I been able to debrief right then...I feel like that probably would have helped a lot more.

One participant witnessed a newborn resuscitation, and had lost a baby herself during delivery. After the event, the feelings and emotions of the loss came back. She did not express her grief to her instructor or group in post-conference. She kept her emotions to herself until she returned home, turning to her family for support. She was never able to debrief with her nurse after the event.

I don't think they were trying to comfort me. They were just worried about the patient. I mean, I was fine. I didn't break down and cry or anything, but, you know, afterwards I think is when all the emotions come, because during it you’re just in that moment, and you’re just... You know, you try to deal with everything and trying to be helpful to the patient, you know, and then afterwards it’s, I think when the emotions come. I mean, it happened close to when we were leaving to go to our conference. And so, she was too busy, you know, helping with

everything, you know, helping the doctor, and so, yeah, I mean, I just said, “well I got to go.” She said “thanks.” But yes, she was pretty busy, so she couldn’t really take time away, from what she was doing.

**Primary category 8: The aftermath.** The Aftermath begins when the student returns home, and often continues for days, weeks, months, or even years. During this time, support is critical. Students experience a range of physical, mental, and emotional responses to the event, and need support from faculty, staff, family, and friends. Flashbacks and difficulty sleeping were the most commonly discussed negative mental and physical responses amongst participants. For the participants in this study, flashbacks were intrusive images of the patient’s physical appearance during the event or after death that occurred repeatedly, interfered with the participant’s ability to concentrate, and triggered sadness and anxiety. Some participants experienced flashbacks during class when triggering concepts were discussed:

Sometimes at really random times like I'll just be doing ATI questions and it'll just be like, “oh, I remember that medication with that on her.” Like sometimes if I am not doing anything, if I'm just kind of relaxing at home, sometimes I'll think about it like “I wonder how her family's doing.” And then I do get flashbacks of seeing her initially...like a one off and then it's gone...I think it's still at the back of my mind. Like it's still it'll be there for a while.

Among participants, the most commonly discussed flashback images were of the patient’s appearance during and after the event: “I can still remember the chest going in super far and how he looks like my husband. But other than that, I wouldn’t say long term effects. It probably was about like a week or two before I started feeling back to normal.”

One year after the event, one participant described how flashbacks affected her:

I do think about kind of just seeing a dead body. So that's what bothered me most about it. It won't ever randomly. It's mostly in class when someone's talking about it. Or if I see a CPR ad. And then I remember back to when I did CPR...I don't think they affect me in a negative way anymore. I think they're kind of like just



there and remind me of my experience, but I don't get hung up on it anymore. And I don't feel scared when I think about the experience.

Participants also discussed having dreams about the event: “sometimes I think I would have dreams about his face, and his eyes. That was a big thing. And sometimes I would have reactions when I would get a similar patient.” Another participant stated: “Occasionally, I'll sometimes have like dreams where I will kind of repeat the process, but I wouldn't say I have any nightmares or anything like that.”

Difficulty sleeping was reported by a few participants, lasted for less than one week, and began as early as the first night immediately following the event: “I still had trouble sleeping for about a week after that.... it was just about a week of having trouble sleeping, and then my husband came back from his trip and I was able to spend time with him and kind of come to terms with things.”

Support in The Aftermath period includes any follow-up support from faculty or hospital staff in the days, weeks, or months following the event, whether it be faculty and/or hospital staff reaching out to students, or students reaching out to faculty and/or hospital staff. Support in the Aftermath includes talking with students, providing students with resources for coping and support, watching for decline in mental health state, and helping students recognize if and/or when professional help may be needed for psychological recovery. One participant, about her clinical instructor, stated: “She gave me support. She told me that it was okay to cry (laughs). That it was okay to let things out.” Another participant discussed how her clinical instructor provided reassurance: “she was reassuring in that it sounded like I had done everything I was supposed to do, and it wasn't my fault.”

Faculty support can also come in the form of sharing personal experiences with critical events. Participants in this study benefitted from hearing about faculty or staff's first experiences with similar events and how they coped.

she told us the story of the first C-section that she had seen. And so, it was helpful because I was like, "is this normal?" This is crazy...she told her first story and how shocked she was when she had seen it. So, she explained to us also that you might not feel like anything now, but in the next days or weeks, we might start to be thinking about it more. And she said if that was the case that she wanted us to come and talk to her. And then if we needed to, we could go to the psychological counseling. But yeah, she was really helpful in pointing out our resources with that and making sure that we knew that we didn't have to keep it all bottled in, even if we just wanted to talk about it again...: I did go into her office the week later to talk about it.

Faculty also provided additional resources, and encouraged additional debrief sessions on campus. One participant was given the clinical instructor's telephone number and was told to call him or email him if she could not sleep at night. She was also invited to come to his office to talk if she wanted additional debriefing time:

the next day I went into my teacher's office and I was kind of crying about it because I was overwhelmed, and I didn't know if it was normal for me to feel this way. Then I told him how it was kind of disappointing to me that my family...they didn't feel...because I was going to tell them this huge story, and they're kind of like, "oh, yeah..." And so, I talked to him about that. And I think I was in there for almost two hours talking to him about it.

One participant was impacted by the care her clinical instructor showed when she followed up months later:

she said "well you know, as nurses, it our job to advocate for our patients, and as a nursing educator, I feel like it's really important for us to advocate for our students. So, she said "that's really what I'm doing here. I want to advocate for you, and make sure that you feel supported." And I really believed her. I really felt that. It was a really cool philosophy to hear, I was like "I love that."

Some colleges and universities have on-site student health centers and psychological counseling and therapy centers. Several participants in this study discussed

learning about their university's health services in class and receiving contact information, including telephone numbers and hours of operation. Two participants in this study discussed utilizing these services, as well as non-university psychological services, after witnessing the event.

I went to counseling twice to talk about it, and I didn't feel like I needed to, but I just kind of wanted to in case they saw that something wasn't right with me, even though I thought I was fine. And that therapist was talking to me and he explained to me how trauma can affect you two months or even a year from now. And so, I always do keep that in the back of my mind, to mentally check and make sure I'm okay with what had happened.

I did go again to my teacher. And this was about two months after it had happened. And I told him "I feel like I'm overreacting." And then he talked to me and I went to counseling again, and they made sure I was okay with everything. I went through [university] psychological services. And then I also at home have a friend who's a psychologist, and I've talked to him about it several times just because I want to make sure that I'm not trying to trick myself into thinking that I'm okay. And that was during the summer. So, six months later. And I was okay at that point, I was just trying to make sure. And I think those resources were really helpful to me.

For some, when faculty or staff did not reach out to follow-up with the student, the student reached out to faculty for support and additional resources. Some participants were too intimidated or shy to reach out to faculty, and some felt that reaching out showed weakness. For others, reaching out to faculty provided perspective. One participant wanted to know if witnessing critical events ever becomes easier. He emailed several faculty to see what their responses would be:

interestingly, everyone seemed to have a different perspective on that...I think on some level I was looking for someone to say, "you know what? Eventually it gets easier." But nobody really said that. And I think that...gave me a better appreciation for, you know, "hey, as nurses, especially a higher acuity nurse, we're not just these sterile, icy cold beings with, no feelings like we're machines, we're emotionally invested in these patients and we care about the outcome and we care about them and the people that may be left to pick up the pieces if this patient passes away."...it doesn't get easier. And I think the reason that's a good

thing is because it shows you still really care about the patient and that you care about the work.

Many participants in this study stated that they were 'fine,' when they were not. Other participants really did think they were okay, only later to realize that they needed time to talk but did not take the opportunity: "And then she's like "are you okay?" And I'm like you know "I'm fine, I'm fine." Faculty and staff may not follow-up if they are under the impression that the student does not need additional support.

we both said, "yes, we were fine." But there was never really any follow up after that. And I wish that he had taken us aside, maybe a couple of days after and said, "I want you to talk through this" or "I want you to say how you're feeling" or anything like that would have been helpful instead of just asking that one time question and then letting us be.

Lack of follow-up was a common theme among participants. Though several students in this study received support from faculty during The Aftermath phase, many did not. One participant made notes on a written assignment alluding to the fact that they needed help, but faculty did not pick up on clues:

I kind of felt silly, because I didn't want to reach out to my professors for help, because I was kind of okay. So, I just mentioned I was having trouble sleeping and I wondered if they would bring everything up and they never did... I think he wrote. "Good to know" and wrote something after it. And had written comments like, "Oh, this is good." "This is great." "Good to know." I can't really remember exactly what he wrote, but I remember feeling like... I guess I didn't feel neglected or anything...I was slightly disappointed because I was wondering, maybe he would have advice for me or something, but it wasn't in the thing. But then again, I also I also didn't reach out for it either.

Many participants recommended that faculty follow-up with students days, weeks, and months after the event. One recommended: "They could call or something or just text and say, "hey, are you doing okay? Was this event... did it cause any lasting fears or emotions in you?" or "do you need any counseling?" Another suggested: "I think just checking up on them. Like even if it's been like a week or two. Just ask them how

they're doing.” Another participant suggested that schools of nursing have designated faculty to help students after witnessing critical events.

**Primary category 10: Coping/resilience.** The majority of the data, and the largest of all the categories included concepts relating to coping and resilience, or lack of. This category includes development of coping skills and resilience, and specific methods participants used to help cope after the event. Three secondary categories of significance emerged from this primary category: Risk Assessment, Home Support System, and Post-Event Growth.

Coping is an individual, personal process, and participants used a wide variety of techniques to cope after the event. Those who reached out for help, rather than cope on their own, recommended that other students do the same. Immediately addressing feelings of stress, sadness, overwhelm, guilt, anxiety, and other forms of psychological distress, rather than ignoring feelings and ‘moving on’ helped students obtain assistance and support earlier:

I tried not to hide it and to keep it to myself. I made sure I addressed it, because just from what I've understood in the books I've read and life experience, I know that things are handled better when they're handled immediately. And so instead of letting that press on myself for a long time, I decided to look at it and decide what I was going to do instead of being quiet about it and trying not to think about it.

Many participants discussed the coping skills they developed throughout their lives that helped prepare them for the event, and helped them cope afterward. Some had parents who taught them coping skills as children. One participant stated: “Lots of practice. And my mom is also a social worker, so.... She was going through school while I was growing up and she would practice on us all the time.” Some learned coping skills through prior careers. And several participants discussed histories of mental health

conditions and therapy that helped develop coping skills prior to entering nursing school.

One participant stated:

It's been a lifelong process. So, I mean, I've had a lot of anxiety. And I guess like panic attacks since I was probably in elementary school kind of thing. And was undiagnosed for too long...I've been spending a lot of time over the past couple years...the past four or five years, trying to learn coping mechanisms to get my anxiety in check. That's my whole goal, and it's gone pretty well.

A variety of at-home coping methods were used by participants in this study. Self-care, spirituality, mindfulness, reflective writing, and hobbies were discussed most. Self-care was described as relaxing, and taking time for one's self: "try and relax and have self-care, I guess is the best way for me to cope with things?...I think that's the best thing I do to cope. Just try to relax because we are in such a high-stress job...it's just important to kind of have those days." One participant remembered her husband, who had witnessed a traumatic event in the past year, and how she cared for him. In doing so, she realized that she needed to care for herself just as she had cared for her husband:

my biggest thing with self-care is, is treating yourself how you treat others, because I think that we sometimes treat others better. As far as like when they're going through a difficult time, we're a lot more compassionate than we are with ourselves. And so, I think that experience kind of helped, too, later with the code, about a year later, with "I need to take care of myself the same way that I took care of [husband] kind of thing, by checking in. And so, just the immediate...taking care of it and addressing it, and acknowledging that it happened... think it was just a matter of time. Because I was mostly affected emotionally from it. (tearful). I mean, obviously...I've had a lot of practice dealing with my emotions. Not quite to perfection, but we're working on it.

Spirituality and religion were also discussed. Some participants used prayer to help with coping: "From a religious aspect, definitely to me it is God...I also prayed a lot after, which helped me..." Another coping mechanism used amongst participants was reflective writing. Participants discussed writing in journals, or using school writing assignments as methods for coping. One student described a clinical analysis writing

assignment she did for clinical, and how helpful it was to reflect on how she was feeling in the moment, how she was feeling afterward, and how her behavior could be connected to what she witnessed. Another student described a capstone writing assignment with similar objectives:

we had to talk about our feelings and things like that. We had to talk about what we did to intervene...about how it was scary not knowing in this whole situation what to do...I think that they were super helpful because, instead of not saying anything about how I felt, I think it's good to talk about it in an area where it's safe... with new nurses they're afraid to talk about it, because they're like "am I violating HIPPA if I talk about this?," at least that's how I felt at the time. And so, I think it was nice to have a safe environment where you can do that in school and talk about it.

One participant discussed learning about reflective writing as a coping mechanism from a guest speaker at her university, and immediately went home to write her feelings. Her writing allowed her to realize that there were many good things that happened that day, not just one bad event, and she was reassured that her efforts helped with the patient's care. Mindfulness and grounding techniques were other coping mechanisms described by participants. One participant described how she used mindfulness to avoid triggering:

It really helps to be mindful. Sometimes later on in my capstone I would get a patient with abdominal pain in that same room, and I would have a reaction, but it's helpful for me to be mindful and say "oh, I'm having a reaction right now" and once you're able to own it it's easier to keep moving forward. So that's been helpful in my coping... for me it's really about taking time to listen, to ground myself and listen to what's happening in my head

Another participant described grounding techniques, which are similar to mindfulness, taught to her as a child by her mother:

I used it all the time when struggling with PTSD or anxiety flare-ups at school and such. I would use 'grounding techniques' until I had enough control over my thoughts to redirect them by doing something else. I would usually follow it up

with some type of self-directed breathing exercises, or listening to music when able, at school.

Development of coping mechanisms often took time, and one student described focusing her efforts on grounding herself and re-directing her thoughts when she would begin to feel anxious:

if I start heading down that rabbit hole, I can kind of take a step back and say, “okay, but not every single patient in this facility is going to code. Not every single person that has a sudden drop in blood pressure is going to code. Talking myself back into the situation... You need to stay in *this* box, not heading down in this box over here.”... that's taken a little bit of time.

Two participants described hobbies they used as coping mechanisms. One participant used guitar and woodworking to help cope, and send photos of woodworking pieces she had created (see Appendix K). She stated: “I had to focus so much on what I was doing in order to not accidentally nick myself that it left no room for overwhelming or intrusive thoughts.” Another student described exercising as a coping mechanism: “I'm very big on exercising and any type of physical activity is my coping mechanism...that's what I turned to after all this. Just exercising a lot and just staying active.”

For some participants, time was identified as a coping mechanism. It took time for some to reach psychological recovery, and new knowledge through additional schooling and new experiences in school helped students focus their thoughts on other things, instead of focusing on the event and their stress-response.

**Secondary category 7: Risk assessment.** The category of Risk Assessment stood out from the beginning of the study for a number of reasons. Though a few students recounted conducting a form of mental health and support system self-assessment during their program, most did not, resulting in many participants not having an immediate support network in place prior to witnessing the event. Adding to the significance of Risk



Assessment, nine of the fourteen participants in this study had a prior history of trauma, such as the death of a family member, death of a child during childbirth, suicide of a fellow student nurse, witness to abuse, or witness to trauma; and/or had a prior mental health diagnosis, such as depression, anxiety, PTSD, social anxiety, and panic attacks. Awareness of risk for psychological distress and trauma may help faculty better support students.

One participant who lost a baby during childbirth had not told her school of nursing, her instructor, or anyone in her cohort about her experience. During a labor and delivery clinical, the student witnessed a newborn resuscitation, and though the student describes feeling grateful that she was able to provide emotional support to the mother, the event also triggered feelings of loss and grief:

the baby wasn't breathing very well when it came out. And so, they were working on the baby and, you know, the mom was crying because she knew something was wrong with the baby. And it was just kind of stressful. And I lost a baby before. So it was, you know, just kind of stressful that way.... (tearful)

Another participant had lost her father to heart disease a few years prior, and the loss was still difficult to cope with:

my father had heart disease and stuff like that going on. And then he ended up passing away when I was 17. When I see at the hospital like, kids who recently lost a parent, or family there who has a dad that's passing away or stuff like that... it's not always that way, but every once in a while it will sneak up on you, and that can be a harder situation to witness because of my personal tie.

When students are open with faculty about events in clinical that may be difficult for them, faculty may be more open to changing clinical assignments to avoid triggering psychological distress. One student was open with her clinical instructor about her history of PTSD, and faculty worked with her to help avoid triggering events. Her instructor's

knowledge of the student's history also helped her better support the student after she witnessed two unanticipated critical events in one day:

they were really careful about if anything related to that was coming up that they made sure I knew ahead of time. I could... I had permission to take part in it or be excused from it depending. And they would follow up with me throughout the whole thing and afterwards to make sure that it was fine and that I was doing okay, which ended up being super helpful

Another student's history of PTSD helped her cope after witnessing an emergency and subsequent patient death, because she had received many years of therapy to learn coping mechanisms prior to entering nursing school: "I felt like having experience with trauma, I better knew how to cope with this trauma because I had coped with trauma in the past." The experience before, during, and after the event helped many participants develop new coping skills and increased resilience, strengthening resolve for the future, whether as student nurses, or after graduation when students are practicing as licensed nurses.

The most helpful thing that I found has been thinking about the event that happened that I'm upset about, or worried about, or stressed about, and saying, "well, it happened. You can't change it, because it happened. What you can change is your reaction to it right now. And you can worry about it or you can decide to learn from it."

**Secondary category 8: Home support system.** Home Support included data relating to participants receiving or not receiving support from peers, friends, or family. Most participants in this study discussed their Home Support System and the impact that having a home support system, or not having one, had on their coping and psychological recovery. Home Support System became a significant theme in the data because of the impact it had on the student after returning home. Though faculty and staff may be

available for support, they are only available on campus, and students need other forms of outside support to help them cope with critical events.

Talking with family, friends, and peers was one of the most frequently discussed forms of support amongst participants, and helped students process thoughts and feelings, often providing Validation and decreasing Isolation. Students also identified talking as a way of helping others: “I think it's really important in general to share to help other people. And that's been the biggest thing that helped me overcome anxiety, was the idea that I can help other people through my experiences, and that's my purpose.” One participant stated: “there were still rough things, but... I feel like it wasn't traumatizing for that long once I started talking about it and working through it.” Another participant stated: “I was able to just remember why we did nursing in the first place, and why we even did healthcare in the first place.”

Discussing the event with their mother was comforting to several participants:

And then I was able to call my mom and talk to her for a good while, and we talked about the purpose of nursing, and I have a really spiritual approach to nursing and dealing with hardships, which really helps me. And I was able to discuss with her for a long time, and I told her my feelings... It's always great to talk with my mom about it. My husband's really good, but, you know, moms are moms. She listened and then we talked. And then she just affirmed that I was doing the right thing, and that I can be an amazing nurse, and that I did a good job, and things like that.

Another participant stated:

I think just talking about it. I talked about it with my mom a couple more times and my fiancé. I think just talking about it, thinking about it, is what really helped me to work through it...My mom just... told me that “as hard as it is, this is part of the job. This is what you're going to see.” And I feel like that's something I already knew. But her kind of saying that made it I guess just hit home. And she just said, “I know it's hard, but if I know you, you're more than capable of handling this.” So, I guess just kind of having that reinforcement that despite it being hard that I can still push through it, I can still handle it, really helped.

For others, talking with peers or other student nurses provided comfort and support. One participant stated: “I also had a really good cohort. We all became really, really close like family. And so, we would talk to each other and help each other all the time and follow-up with each other.” Another participant discussed how sharing the experience with friends in the medical field helped her cope:

I think they did a good job of not making it about “I can't believe you just saw someone die.” But it was a lot more of like, “are you taking care of yourself, like how has this changed what you want to do?” I kind of I thought it was nice that they could segway it into a more normal conversation

One participant messaged a fellow nursing student in her cohort when she got home, and her friend hurried over to help comfort her. She described how much better she felt after her friend was willing to let her talk, and cried with her all night. Another participant discussed the ability to talk with her brother, who was a medical student at the time and was able to relate to what she was going through: “we'd bounce back off each other and be like, “you still alive? Yeah, you? Yeah.” (laughs) And we were able to kind of give each other helpful tips, sometimes commiserate with each other.”

Some participants found that talking with those outside of the medical field was difficult, and hesitated bringing up the subject either because they thought it would be difficult to relate to, or because they were worried those outside the medical field would find the event too difficult to hear: “It took me a while to tell non-nursing people because it's kind of a lot for a nursing student, let alone someone who is not. But I did start to mention it.”

**Secondary category 9: Post-event growth.** Post-Event Growth demonstrates how the event impacted the student’s cognitive, psychosocial, and affective learning, as well as mental, emotional, spiritual, and personal growth. This category was titled “Post-

Event Growth” rather than “Post-Traumatic Growth” as found in the literature, due to the fact that not all students who witness critical events are traumatized by them, but most will learn from them.

All participants in this study described the event as a learning experience; however, learning experiences had the potential to be negative without adequate understanding and support. Post-Event Growth also includes data that demonstrate how the event helped develop coping skills and strengthen resilience. Emotional resilience was a common theme throughout the data. Many participants learned to recognize positive and negative emotions, and learned how to cope with them:

I think my advice would be that it's okay to feel anything that they're feeling. No matter what. That each emotion is valid and important that they experience. Nothing is right or wrong. It's okay to be upset. And also, to get help if they need help...What matters most is how we deal with it after the fact. And to recognize that you're feeling off.

A few participants mentioned that although their experience occurred prior to learning about related concepts in the classroom or lab, they felt that the experience prepared them for when they encountered the simulation lab later on, giving them increased confidence and knowledge to know how to react: “This semester I think it puts me at an advantage over other students because they're still like “I’ve never done a code before” and I kind of got that initial shock out of the way.” Another participant stated: “in my ICU sim lab we did an entire day of code blue prep and I was the charge nurse that day. So, I was the one calling the shots. And I’m telling them “you're going to start CPR, you're gonna do the machine. You're doing meds!”

For most participants, the event was a life-altering experience, one that they will never forget: “I think it's true when they say, like, you never quite forget the experience.

You know, the sounds, the smells, everything that kind of goes along with that.”

Participants were profoundly moved by what they witnessed. The event provided an opportunity to see what real-life high-stakes nursing care entailed: “I say I became a nurse to help people on the worst days of their lives. And in ICU I saw what that meant. And I’m not sure I understood the scope of that until I was in ICU.” But the event also moved students on a more spiritual level. Many described being personally changed, on a deeper human level. One participant learned through her experiences during and after the event that it is okay to be affected by patient care:

We're going to some days take nursing home with us. We're going to take some patients home with us. There's some patients we're never gonna forget. I know I will never forget that patient. That was the first time I saw death. And so, once I accepted that it's okay to not be okay, it's okay within the profession, to grieve your patients, to need a moment for things to be hard. We're not meant to be these robots that nothing affects us, that we just keep pushing through when we watch something traumatic. We're allowed to be humans and have a hard time with it. So, once I accepted that, and started talking about it, and didn't force myself to be like, “Oh no, this is nursing. I'm okay. Let's just go.” I took a step back and took a minute to grieve or to talk about it. Then I was able to cope well, and now I can talk about it and it doesn't... I mean, it obviously has an effect on me and my nursing practice in general, but it doesn't weigh on my heart like it used to, unless I think about it too much.

Participants learned that as nurses they needed to develop balance between feeling sadness and grief, and not letting those emotions affect them so much that they were unable to function as normal:

My biggest takeaway is it is okay for nursing to be hard. We take it home with us. We have patients that stick with us. We have times we cry over different situations and that's okay. There is a balance between caring too much and becoming so jaded you don't care at all. And everyone has to find where that balance is for them. But I would encourage all students to find that balance, because you can't have every single patient causing you to breakdown, but you also can't just not care at all.

Many participants expressed feelings of wanting to be in similar experiences again, knowing what they know now, and one participant described wanting to use his new knowledge to care for more patients, help his colleagues, and teach future students. Some participants were impacted personally by the event. For some, the event allowed them to revisit their past. For others, the event made them more aware of the importance of personal relationships. One participant gained an increased awareness of the importance of living wills and advanced directives: “to have put him in the position of making those decisions when he was in that situation, it was just...I thought about the process pretty clearly in my head that I just... I would not want that to happen to anyone that I loved or to myself or anyone that I knew.” Another participant was very touched to be able to provide the needed support for a new mother whose baby was being resuscitated, an event she, herself had been through. She was affected so much so, that even though the event was somewhat traumatic to re-live, she considered it an honor:

I've always wanted to be able to help somebody through something like that just because I've been through it before...It was probably a good thing because, sometimes when you revisit problems in your life that you've had, or tragedies, and you're able to talk about it a little more, I think it helps to let some of the pain go... (long pause) I think sometimes you think you're over something, and then something happens and (long pause, tearful) but it's always good to be able to talk to people about it.

Another Post-Event Growth theme was career impact. Many participants described the event as a positive learning experience that would shape their future career as a nurse: “as hard as this was for me, and as much as it sucked to see it, I feel like it will ultimately make me a better nurse in the long run.” Another stated: “, I definitely think it was a good preparation for me in my future career.” For one participant, the event taught her compassion, and increased her awareness of patient dignity: “it kind of reinforces my

desire to be the person who can provide that support for a family member and to take care of these patients and to give them the death that they deserve, even if it is in ICU attached to a lot of tubes. It's still possible to have some dignity.”

For some participants, the event made them not want to work in the nursing field the event occurred in: “I don't think it changed where I want to work in the nursing field...I just think it changed my outlook on events that will happen. I have accepted death would be a part of it...And I think it changed how I'm going to look at those situations.” Another participant stated:

we were both on each side of my patient trying to help her calm down because of the pain. Yeah, it made me...that's the reason I don't want to be a labor and delivery nurse, actually, because I don't know if I could deal with it if the baby had passed away. How do you explain to the husband when he came?

And for other participants, the event changed their career goals and made them want to work in the field where the experience occurred: “I never thought I would do oncology to be honest with you. Even before... even before like being on the unit before this, in the spring before going on the oncology unit, there was something about oncology that, this kind of feels a little dumb, but calls me?” Another participant stated:

I think it's maybe prepared me more for trauma because after that initial experience, I was like “I'm never working in the E.R. or the ICU or anything. I was going to work in a care home and be really chill about everything. But over time, it's really helped me to grow as a nursing student and to realize that I can do things like that. I can be an asset to codes. And I think even though it was traumatizing in the moment, it has helped me in the future because all the other things I've seen, I feel like they just can't compare to that experience, so I won't be as affected by it in the long run.... Last year when this happened, I told myself that I would never work in ICU ever. And now I'm like, “I want to be a critical care nurse.” So, I think this overall prepared me. And I'm glad that it happened, just not the way that it happened. But I think it has made me a stronger person and a better future nurse from it.



One participant was positive she did not want to work on a neurology unit when she began her capstone in the Neuro ICU, but the event changed her mind, and she is now working on a neurology unit.:

when I started my capstone in an ICU setting and in a neuro setting, I was like “I’m *never* working here” just because of the simple fact that it’s so critical. And I was like, “I don’t know what I’m doing...I’m a new nurse here...I don’t know what to do. I don’t want to work on a unit where I can’t intervene.” But I feel like the more I progressed on the unit, the more I knew what I was doing and what to look for...I felt more comfortable with it because I knew what I was looking for, and I knew what I was going to look for in different neuro situations. So, it was kind of something I got more comfortable with.

One participant expressed how his new knowledge affects how he educates patients in his workplace:

it shapes how I approach patients that may be declining or patients that may need that higher acuity care, or patients that are changing condition. It affects how I educate patients, particularly in long term care and in rehab where you know, sometimes patients may just not have the full understanding of what a code is, and if, “hey, you’re eighty five years old and you’re frail and you have these other medical conditions, *this* is what really happens during a code, *I have experienced* this. Is this what you *actually want*? And do you feel like even if it were successful, do you have any quality of life after that? So, I think being able to speak from experience as you provide that education to patients and family members is helpful.

### **Selective Coding Procedure- Relationships and Links**

In the selective coding phase, the primary categories and secondary categories were arranged to form relationships and theoretical conclusions in order to depict the ‘story.’ Using the new list of primary and secondary categories and data for each category from the axial coding phase, I conducted selective coding by reading each statement individually, looking at the relationships within statements, and categorizing relationships. Using this method, I created a separate Microsoft Word document where I created relational categories as they appeared throughout the data. I also developed

another document which listed each primary and secondary category that I used to draw relational arrows to help me visualize cause and effect. Links between two or more primary and secondary coding categories appeared in nearly all axial coding participant statements. Details on the relationships between concepts are depicted in the following section.

**Relationships: Relationship of trust.** Participants in the study wanted a familiar person who they felt comfortable communicating with to be a part of their experience and help them through it. Those who trusted the clinical instructor or staff nurse were more likely to ask questions throughout the event, and more likely to speak up when uncomfortable. Those who did not trust the clinical instructor or staff nurse were less likely to ask questions, and felt more isolation, helplessness and lack of control. As one participant stated: “I think it was more of the staff that made it difficult for me to deal with because my teacher was very supportive, and we had a lot of talks afterwards about it. But yeah, the staff was kind of insensitive towards me...So, that made it difficult.”

Participants who felt they did not have a trusting relationship with faculty or staff felt more isolated and less understood after the event. Some participants mentioned not feeling supported and not being understood. Others discussed not feeling comfortable with faculty, and not feeling connected in a way that allowed them to be vulnerable with their emotions. Not feeling like they could turn to faculty for support added to some students’ psychological distress: “I think that’s probably what was most traumatic, in a way.”

Participants who trusted the clinical instructor or staff nurse were more likely to request additional resources and/or additional debriefing time on campus. For some, the

relationship of trust was established early on, and students felt comfortable expressing post-event needs:

we feel like they're pretty aware and willing to help..., the professors care about us a lot. And you can't doubt that at all. And they'll do anything they can to help us...they have resources for us to take care of us...they're good at checking in with us.

Those who did not trust the clinical instructor or staff nurse did not reach out to them for support and additional resources. Some participants described not feeling comfortable with faculty during the event, and how that lack of trust led to lack of post-event follow-up and additional resources. One student discussed how she wanted support and follow up from her clinical instructor, but did not feel that he would understand her emotional state. Rather than approaching him directly, she wrote about her experiences in her clinical assignment, hoping he would read it and approach her, but he never did.

Participants who felt they did not have a trusting relationship with the clinical instructor or staff nurse were less likely to speak up when uncomfortable with tasks or assignments that were given to them. Some participants were uncomfortable saying “no” when they did not want to participate, but felt pressured into performing tasks or skills during the event. Those who felt they had a trusting relationship, were more likely to speak up. One participant was able to say “no” when she needed to: “I remember someone asked me to draw up a med...and I'm like, “I can't think straight right now.” So, I was like “I'm not risking this patient's life because I can't think straight.”” The ability to speak up also was influenced by the student’s confidence level and initiative.

**Relationships: Preparation.** Coping skills and resilience affect preparation. Strong coping skills and resilience helped students handle the situation better than those with fewer coping skills. Students’ in-event stress response varied. Some were initially

excited and then fearful and, some were anxious from the beginning, and the relationship with preparation was stated often as a factor for students' emotional reactions. Though some students felt they understood what was happening during the event, and were further along in their schooling, most expressed anxiety and stress related to not understanding the situation, not being prepared for the sights, sounds and smells associated with the event, and difficulty understanding why care was provided differently than what was expected based on television and movies.

One participant expressed the desire for education on personal coping, in addition to how to help patients and families cope with death, emphasizing that student emotional health is as important as the patient's and the family's emotional health. Various forms of mental health preparation were helpful for participants, such as in-class education on secondary trauma, self-care, psychological trauma in the clinical setting, compassion fatigue, and burnout. Videos depicting student experiences with critical events in the clinical setting were effective in preparing students for the possibility of witnessing a critical event; however, participants felt that the videos would have been more helpful if they were shown a second time, just prior to critical care clinicals, to remind students of possible coping mechanisms and help them prepare mentally.

For some, the reality of actually seeing a trauma was downplayed by faculty, who underestimated the frequency of such events and the chance that a student might see it in the clinical setting. One participant discussed being off guard because faculty had discussed the rarity of critical events, causing him to believe that he would never see one.

**Relationships: Nursing education/knowledge.** Many participants had not yet learned about critical events, and had not participated in the sim lab prior to witnessing

the event. Participants who were able to participate in the simulation lab prior to witnessing the event felt they understood, for the most part, what was happening. Classroom learning and simulation, however, did not adequately prepare students for how quickly patients can deteriorate, and how often cardiopulmonary resuscitation (CPR) and advanced cardiac life support (ACLS) is unsuccessful in resuscitating patients, even when performed perfectly. One participant who was able to participate in simulation prior to witnessing the event stated that she was prepared to know what to expect, but was not prepared for the patient to not survive.

Participants described not being prepared for the appearance of the patient during the event, making them feel uncomfortable. Edema, purpura, mottling, distention, dilated pupils, palor, purpura, and blood loss were physical characteristics described as being disturbing to some participants. Two participants described how difficult it was emotionally to not see providers defibrillating like they had seen on television and in movies, and not understanding why it was not appropriate. Some did not understand medications that were given, and rationale for other treatment measures. For those who witnessed patient death, calling time of death was especially difficult.

Preparation also affected the role the student assumed in the event and whether or not students felt comfortable performing tasks. For nearly all participants in this study, the event they witnessed was new. Preparation for the event in the classroom setting did not involve real people who were sick or critically injured. Simulation for such events did not adequately demonstrate skin color and turgor, flaccidity, blood and body fluid loss, anguish and pain. Many participants described their initial reactions of acute distress, and not feeling prepared to participate. Supportive, encouraging faculty and staff were often

described as factors leading to students choosing to participate. Those who chose not to participate in elements of the event due to lack of preparation wondered what the experience would have been like had they participated.

Those with more nursing education and nursing knowledge displayed better coping skills and resilience before, during, and after the event. Trauma simulation with mass-casualty drills was effective in increasing coping and resilience. End of life education was helpful for some participants in knowing what to expect during the dying process and after death. Students from one program described learning about end of life issues through End-of-Life Nursing Education Consortium (ELNEC) modules (American Association of Colleges of Nursing, 2020). Some participants desired more education on death and dying, and stress management and coping, and felt additional education would have helped them cope better during and after the event. Though some participants stated that end of life education was helpful, it did not adequately prepare them for how to cope: “we talked about end-of-life, we did the ELNEC courses. I don’t know if you’re familiar with that, but we did that for our first semester, but it was mostly having conversations, it wasn’t necessarily learning how to best cope with situations.” Pre-clinical preparation courses were also helpful for participants, and provided resources for coping.

**Relationships: Life experience/beliefs and values.** For many participants, upbringing and religion increased coping and resilience before, during, and after the event. Some participants had parents who worked in the medical field and had taught through example how to cope with psychological distress. Others described how their faith foundation, religious upbringing, and belief in an afterlife prepared them for witnessing patient death. Prior work experience and history of therapy also increased

coping and resilience. Several participants in this study had histories of mental health diagnoses. Those who had participated in therapy in the past felt their coping skills and resilience were strengthened prior to witnessing the event.

Participants who had not witnessed a critical event before required more time after the event to cope with post-event stress responses. Those who had witnessed critical events in prior work positions felt more prepared to witness the event they encountered in the clinical setting. Participant work experience included prior work in mental health, education, and work as nurse assistants, operating room technicians, or EMT's. One participant who worked as an operating room technician felt that she had become "desensitized" to trauma, and that nothing she had seen in clinical compared to the critical events she sees at work:

I'm more prepared just because I'm not shocked by what I'm seeing. It doesn't paralyze me... I see that stuff now and it's just like 'whatever'...I think it's a good thing if I can be desensitized enough to know what to do. Act quick when I need to in helping a patient with lifesaving care.

One participant in this study was an ethnic minority. She felt that due to her upbringing and culture, she was less prepared to approach faculty for support. This participant felt that in general, ethnic minorities were less likely to reach out to faculty for support or approach faculty with needs or questions.

**Relationships: Finding a role/role conflict.** Participants in this study initially chose one of three roles: 1) Participant/Team Member, 2) Comforter, and 3) Observer/Not Wanting to Participate, but as the course of events progressed, all observers became participants due to either a sense of accountability, clinical instructor/staff encouragement and support, or intimidation and pressure. Finding a role students were comfortable with led to decreased anxiety, and pressure to participate led to increased

anxiety and stress. Gaining the courage to participate hands-on was often influenced by the clinical instructor or staff nurse's encouragement and support; however, some students felt pressured and intimidated into participating and performing tasks. Taking on a role one is uncomfortable with can lead to increased confidence in one's abilities and a positive learning experience, but can also lead to in-event and post-event psychological distress. The role the student assumed during the event led to the response afterward, and subsequent coping. Those who participated in an event that led to patient death often experienced feelings of second-guessing, self-questioning, prolonged grief, and more difficulty coping.

*We did compressions the right way. We gave the right meds at the right time, we...assessed the patient. The physician gave us orders. We followed the orders to a T. Why didn't the patient improve? Or why didn't they get better?"...it's, I think, a little bit of a different mindset where you have to, I think, accept the fact that even if you do everything right and by the book and by procedure, it may still not turn out the way it's supposed to.*

Those who participated in an event that led to positive patient outcomes were better able to cope, and expressed feelings of confidence and pride.

**Relationships: Clinical instructor/staff active presence.** The presence of a support person who actively focused on the student and their learning and emotional needs created a supporting learning environment, where students were able to develop clinical skills, and increase confidence and abilities, decrease fear, and decrease anxiety. Active presence of a clinical instructor or staff nurse also positively affected Post-Event Stress Response, and Coping/Resilience .

Lack of Clinical Instructor/Staff Active Presence was related to feelings of helplessness, frustration, increased stress and anxiety, in-event isolation, decreased understanding during the event, and decreased Coping/Resilience. One clinical instructor



checked up on the student prior to the event but chose not to stay and did not follow-up afterward. Some clinical instructors did know the event was occurring, and others were not at the facility because the student was in capstone/precepting. Without a clinical instructor present, students often found comfort and support from their assigned nurse/preceptor or other medical staff, positively affecting In-Event Stress Response. Some participants found support in other student nurses when the clinical instructor or staff nurse was not present, or not able to provide support during the event. Participants were positively affected by student presence, increasing post-event coping.

**Relationships: Pre-brief.** Pre-Briefing was an impactful part of knowing what to expect, In-Event Stress Response, and Finding a Role/Role Conflict; however, pre-briefing was not always possible due to the unexpected nature of most critical events. Pre-Brief allowed students to discuss feelings of fear and anxiety, allowing for support before the event. Pre-Brief also allowed faculty and staff to discuss possible cares the patient might need and which skills students could use during the event, affecting the student's role. Students who participated in thorough Pre-Brief were more likely to have a more positive Post-Event Response.

**Relationships: In-event stress response.** Participants who experienced psychological distress during the event also experienced psychological distress immediately after the event, even with the presence of support staff. Acute distress, anxiety, fear, and concern were common feelings expressed in-event, which usually continued post-event, unless Immediate Debrief occurred. The relationship between In-Event Stress Response and Coping/Resilience was influenced by the magnitude of the event, preparation, support during and after the event, and Immediate Debrief. Triggering

events, such as discussion during class, or television, often affected participants' coping, causing participants to re-play the event in their minds, bringing back in-event feelings and emotions.

**Relationships: Clinical instructor/staff emotional state/actions.** Participants often recalled feeling more stress and anxiety when faculty or staff showed signs of stress and anxiety, and also feeling calm when faculty or staff were calm. Participants who were anxious initially, were quickly calmed by faculty or staff who remained calm and spoke with a calm tone of voice. Participants also recalled being affected by faculty or staff emotions and responses after the event. Staff who showed emotion, such as crying, or provided emotional support to other staff, created an atmosphere where students felt more comfortable with their emotions. Student who saw staff cry, or show other forms of grief, knew that it was okay for them to also feel sadness and grief. Participants who saw staff immediately return to work, showing no signs of sadness or grief, were uncomfortable showing sadness or grief. Participants who were anxious initially, were quickly calmed by faculty or staff who remained calm and spoke with a calm tone of voice.

Staff resilience influenced student resilience. One participant described the unity he witnessed from the staff immediately after a code and subsequent death of a patient on the unit:

It was really inspiring to see just how cohesive everyone worked together in the middle of all that. Despite the chaos, they all communicated. They all knew their roles and what they had to do. So, it was just, it was inspiring. And it kind of just represented to me that it's, you know, I feel like I chose the right profession. I feel like I can be one of those people in that giant machine, per-se.. So, I guess I'd say that it was hard, but I learned a lot from it.

**Relationships: Post-event stress response.** Every category in this study was shown to affect Post-Event Stress Response. Acute distress, sadness, and disbelief were

common feelings expressed post-event, and those feelings often carried over into the aftermath stage, especially without Immediate Debrief and follow-up. Post-event feelings and thoughts sometimes translated to days, weeks, and months of psychological distress, such as anxiety, fear, panic, sadness, mental processing, questioning, second-guessing, difficulty concentrating, exhaustion, difficulty sleeping, and flashbacks.

**Relationships: Isolation.** Isolation was found to be related to Coping/Resilience. Feeling alone, like no one else understood, not feeling like others could relate, wanting to know what they were feeling was normal, and not knowing how to feel, process, or react were common themes related decreased Coping/Resilience. Some participants did not feel comfortable talking about the event with others, especially immediate family members, resulting in the student coping on their own.

**Relationships: Validation.** Receiving validation was also related to increased Coping/Resilience. Lack of validation was related to more difficulty coping. Participants discussed how difficult it was emotionally when they were not validated in their thoughts, feelings, emotions, or actions. Participants reported feeling better when they were told their thoughts, feelings, and emotions were normal. One participant stated:

I did talk about it with the student that was in there with me a few weeks later because we were telling a bunch of our other classmates what happened. And I think that was helpful for me to explain what I saw. And to see that they were shocked just from hearing it. So, I was kind of validated, like “Okay, I’m not crazy.”” (laughs)

**Relationships: Immediate debrief.** Those who participated in debrief were given the opportunity to gain understanding of why interventions were performed, why the outcome occurred, what could have been done differently, and whether or not the outcome could have been prevented. Participants also described receiving reassurance,

resources, and encouragement during debrief. Immediate Debrief provided the opportunity for participants to gain closure, and was related to a more positive Post-Event Stress Response and greatly increased post-event Coping/Resilience.

Immediate Debrief, as opposed to debriefing later in the day, was most effective in decreasing Post-Event Stress Response, but was not always possible. The effectiveness of debriefing was influenced by two factors: the immediacy of the debrief, and the adequacy of the debrief. Whether Immediate Debrief was possible or not, debriefing shortly after during the hospital debrief, or debriefing with the clinical instructor or staff nurse later in the shift was also of importance. Hospital debriefing was a positive experience for those who were invited to attend, and was an effective method for decreasing student post-event psychological distress.

Post-clinical conference was another form of debriefing that participants found helpful in their coping. Immediate Debrief was more effective in decreasing general stress response, because it was done right after the event; however, for those who were not able to receive Immediate Debrief, and for those who had, post-conference provided a safe place where participants could discuss the event and receive feedback, validation, and support from the clinical instructor and the other nursing students, increasing post-event coping. The combination of Immediate Debrief, hospital debrief, and post-conference was the most effective in helping with student Coping/Resilience, and overall for participants in this study, the more opportunities for debriefing, the better they were able to cope.

Lack of debrief was related to increased post-event psychological distress. Often, Immediate Debrief was not possible due to patient care needs and lack of time.

Participants who did not receive Immediate Debrief reported increased anxiety post-event until they were able to attend hospital debrief or post-conference; however, many participants received no form of debriefing. Lack of debrief was shown to decrease Coping/Resilience, especially during the day of the event. Those who were not part of a debrief had increased difficulty coping due to decreased understanding, lack of emotional support, and no opportunity to reflect and have questions answered. Participants who did not debrief often felt alone, unsupported, and often left the clinical site with increased feelings of second-guessing, fear, guilt, and sadness. Five of the fourteen participants in this study received no form of debriefing after the event.

Debrief, especially Immediate Debrief, was shown to have a positive impact on student coping and stress-relief in the days, weeks, and months after the event. Lack of debriefing was associated with feelings of guilt, fear, anxiety, psychological trauma, and delayed psychological recovery in The Aftermath. Even with debrief, some participants still experienced flashbacks, difficulty sleeping, and post-event psychological distress during The Aftermath period.

**Relationships: The aftermath.** Students were shown to be affected by the critical event for days, weeks, or months following the event. Preparation, Relationship of Trust, and Immediate Debrief were related to students receiving faculty and/or staff support in The Aftermath, and faculty and/or staff support in The Aftermath was related to increased post-event Coping/Resilience. Support in The Aftermath included follow-up and resources provided by faculty and/or staff, such as additional debriefing time, phone numbers for student health centers and psychological services, and mental health monitoring by frequently asking the student how they were doing and what they needed

to help them cope. Follow-up also included the opportunity to ask additional questions, clarify details about the event, and ease concerns about student actions and patient outcomes. Several participants expressed the desire for follow-up from faculty or staff, and wished someone had asked how they were coping long after the event. One participant recommended that schools of nursing have a designated faculty member to help students with mental and emotional distress.

Participants sometimes hindered follow-up by trying to ‘push through’ or ‘tough it out.’ Comments such as “I’m fine” led some faculty and staff to believe that students did not need follow-up and additional support, even though many were not okay mentally and emotionally. Of those who received faculty follow-up and resources, two participants in this study used the psychological services at the university health center for support, three met with faculty on campus for additional debriefing, and two students spoke with psychologists outside of the university to help with coping.

**Relationships: Coping/resilience.** Coping/Resilience prior to the event was shown to affect Preparation, but is also related to In-Event Stress Response, Post-Event Stress Response, and psychological distress and trauma. Students who entered a critical event with strong coping skills and resiliency were better able to experience the event and cope afterward. Participants developed pre-event coping skills through life experiences such as prior work experience, upbringing, religion and spiritual beliefs, and experience with therapy in working through mental health diagnoses and prior life trauma.

After the event, students used a variety of coping mechanisms to help with psychological distress and prevention of psychological trauma, such as meditation, mindfulness, grounding techniques, hobbies, reflective writing, and talking with friends

and family. For some, an extended amount of time and mental processing was needed to fully cope with the event. Students gained coping skills through additional debriefing and support in The Aftermath.

For one participant, lack of coping after witnessing several critical events led to prolonged psychological distress and signs of PTSD. She stated that she started feeling better approximately one year after the event. Another participant experienced a lack of coping that led to psychological trauma. This participant was not able to participate in a debrief, did not receive any follow-up, and did not have home support after the event. The student felt Isolation and lack of Validation, and became withdrawn. In the weeks following the event, the student began having suicidal thoughts, and considered jumping from a cliff during a study abroad trip. The student began feeling better after returning home from the trip, but did not discuss the critical event or suicidal thoughts with her spouse until the day before the research interview, nearly one year after the event.

**Relationships: Risk assessment.** Prior history of trauma, loss of a loved one, and history of mental health diagnosis was related to In-Event Stress Response, Post-Event Stress Response, and Coping/Resilience. Prior history of trauma, for some, triggered psychological distress during the critical event. For others, coping skills through prior treatment and therapy for mental health diagnoses helped them cope with the critical event. Five of the fourteen participants discussed learning about stress and coping management, coursework on self-care, resilience, burnout, and secondary trauma, and four participants discussed coursework specific to acute stress response and psychological trauma.

One participant shared her past history of PTSD with her clinical instructor, who was then more careful when creating patient assignments. This prior knowledge also helped the clinical instructor support the student after witnessing the unexpected critical event. None of the participants in this study discussed participating in a risk assessment; however, many participants recognized their own histories as increasing their risk for psychological distress or trauma, and several recommended that schools of nursing conduct some form of risk assessment. One participant recommended that schools of nursing conduct a support system assessment:

I think it would be awesome if in nursing program had everybody fill out what their support network is and what it looks like. We did an assignment first semester where we had to develop a personal wellness plan, and that included things like self-care...it was kind of like a self-care plan. 'What do you do outside of your healthcare life to help you cope?' And I think that maybe adding on to that assignment of 'who are your supports?' Would be really cool for a nursing program to do.

**Relationships: Home support system.** Family, friends, other student nurses, and colleagues were shown to help the student cope by allowing the student to talk about the event, decrease feelings of psychological distress and Isolation, and receive Validation. Lack of Home Support System was related to prolonged psychological distress and decreased Coping/Resilience. Many participants in this study discussed the importance of a Home Support System in helping them cope with their emotions in The Aftermath.

**Relationships: Post-event growth.** The largest category related to Coping/Resilience was Post-Event Growth. By framing the experience as a positive learning experience and using new knowledge to positively impact their personal lives and future careers, participants were better able to cope and develop new coping skills for the future. For some participants, the experience gave them increased knowledge, skills,



and confidence. Some participants wanted to use their experience to help others. One participant described wanting to share his knowledge and experience with future student nurses:

I want to *be* in those situations and I want to be able to help my nursing colleagues or future students be able to get that same support and feeling of validation for what they do, too...“I am an important part of that care...I'm glad that I had the experience. I'm glad I had it as a student rather than maybe having to experience it a few years into a nursing career...I can now use that experience to help shape how I approach things clinically going forward, but also I can remember how I felt. I can remember feeling validated, and cared about...Maybe I'm a preceptor for someone else's capstone, maybe as I'm a clinical instructor or whatever, but I can use that experience to help strengthen and support somebody that maybe is in learning setting or in a more novice setting and doesn't know how to process things and doesn't know where to go

Many participants discussed the life-altering effects the event had on them personally. Most participants were profoundly affected by what they witnessed, and learned life-long lessons from the event. One participant stated:

It's okay to not be okay. It's okay within the profession to grieve your patients, to need a moment for things to be hard...In clinical... we were talking about ‘how do you not take nursing home with you?’ We see so many hard things. ‘How do you not let this affect you?’ And I say. “You let it. It's okay. You take it home, sometimes you cry. You mourn. And you get up and you do it again tomorrow. And yeah, sometimes that is hard. But if we didn't take it home, we wouldn't be human. That's okay.

Many participants described growing as a student and gaining confidence in their abilities, and all 14 participants described feeling glad that they were involved in the event, even though it was difficult. Students learned that nursing can be hard emotionally, but can also be an enriching, and life-changing career.

### **Final Conditional Matrix Stage-Theory Development**

Throughout the data analysis process, diagrams were drawn on paper, dry-erase boards were used for model development, and connections were worked and re-worked

to determine cause and effect and influencing factors. From the beginning, after only a few interviews, I began sketching. New sketches were created as more and more interviews took place. I tried to depict on paper what was appearing as the stories developed.

An initial model was created after primary and axial coding based on the relationships I was envisioning in my mind as I was reading the data. After primary and secondary categories and related concepts were connected during the selective coding phase, relationships were compared to the initial model, and the model was edited. This new model was compared against the data, resulting in a model that represented the emerging theory. The model depicts the events prior to, during, and after the critical event, the effects of influencing factors on each phase, and possible outcomes.

### **Theory of Student Nurse Support and Recovery Through Critical Events in the Clinical Setting**

Student nurses desire to have a person with whom they have a trusting relationship be actively present during critical events. Actively present faculty and/or staff help students through critical events by advocating, educating, answering questions, and providing feedback. Students who trust clinical faculty or staff are more likely to ask questions throughout the event, more likely to speak up when uncomfortable, and more likely to request additional resources after the event and/or debrief. Students who do not have a trusting relationship with faculty or staff feel more isolated, less understood, and are less likely to reach out for help with coping after the event. Faculty and staff response and actions during critical events affect student in-event stress response.

Most students experience feelings of psychological distress such as fear, anxiety, overwhelm and acute stress during critical events. Active faculty and/or staff presence creates a supporting learning environment where students are able to develop clinical skills, increase confidence in their abilities, feel a sense of purpose, have a sense of control, and remember the event as a learning experience that will positively affect their personal lives and future careers as nurses. Lack of faculty or staff active presence increases feelings of helplessness and self-questioning, decreases understanding, sense of control, and sense of emotional support, and hinders coping and resilience.

Nursing knowledge, life experiences, values, beliefs, coping skills, resilience, current mental health state, and prior history of trauma affect all aspects of critical events. These factors affect how prepared a student is to witness a critical event, the role the student chooses to take in patient care, in-event stress response, post-event stress response, post-event coping and resilience, and psychological recovery. Not all students are prepared to witness a critical event, and may need additional education during the event in order to increase understanding and decrease in-event and post-event psychological distress.

Pre-briefing is an impactful part of knowing what to expect. Pre-briefing affects student in-event stress response and finding a role in the event; however, pre-briefing is not always possible due to the unexpected nature of most critical events. Pre-briefing and active faculty and/or staff presence help the student through role conflict and support the student's decisions about what role(s) to take during the event, and which procedures/treatments/cares to participate in during the critical event. Taking on a role one is uncomfortable with can potentially lead to increased confidence in one's abilities

and a positive learning experience; however, it can also lead to in-event and post-event psychological distress. Guilt, second-guessing, and self-questioning can result from participation in events that result in morbidity or mortality.

Students' in-event stress response, post-event stress response, and coping methods after the event vary. In-event stress response is related to preparation, relationship of trust with faculty and/or staff, finding a role/role conflict, faculty and/or staff active presence, and pre-event coping and resilience. In-event stress response is also related to post-event stress response and post-event coping and resilience. Students who experience psychological distress during the event also experience psychological distress immediately after the event, even with the presence of support staff.

Post-event stress response, or the feelings and emotions a student experiences after the critical event, is affected by preparation, relationship of trust with faculty and/or staff, faculty and/or staff active presence, in-event stress response, debrief, and coping/resilience. Grief, sadness, overwhelm, and wanting validation are common feelings expressed post-event, carry over into the aftermath stage. Feeling alone, like no one else understands, not feeling like others can relate, wanting to know whether feelings are normal, and not knowing how to feel, process, or react are common in the immediate days post-event, even with adequate support and debriefing.

In-event and post-event feelings and thoughts can affect the physical, emotional, and mental health of the student in the days, weeks, and months after the event, a period referred to as 'the aftermath,' resulting in potential anxiety, fear, panic, sadness, mental processing, questioning, second-guessing, difficulty concentrating, exhaustion, difficulty sleeping, and flashbacks. Students who participate in debriefing gain an understanding of

rationale behind interventions and outcomes, what could have been done differently, and whether or not the outcome could have been prevented. Immediate debrief provides the opportunity for students to gain closure, decreases anxiety, increases understanding, provides students time to mentally process the event, and provides emotional support. Debrief also affects coping and resilience after the event. Lack of debrief increases psychological distress and decreases coping and resilience. Home support systems and follow-up in the days, weeks, and months following the critical event, including resources for additional help if needed, helps with student coping and assists students in psychological recovery. Students who do not receive adequate support prior to, during, or after a critical event are at risk for psychological trauma.

Critical events are learning experiences, with or without adequate support; however, support leads to more positive learning experiences, rather than negative ones. With adequate support and psychological recovery, during the end of the aftermath stage students enter the post-event growth phase, where learning experiences and new knowledge result in personal and professional growth. This growth increases coping and resilience, better preparing students for future critical events.

### **Theory Model**

Figure 1, entitled Model: Student Nurse Support and Recovery Through Critical Events in the Clinical Setting, details the theory in model form (see Figure 1). The outer ring of the model shows pre-event factors that influence the critical event period, post-event period and the aftermath period. Black arrows indicate time, from the beginning of the critical event to the end of recovery. At the top of the model is the critical event period, which begins with pre-brief. The top green ring indicates that the pre-brief affects

the student's role in the event, as well as the student's in-event stress response. The student's role also influences in-event stress response. During the critical event period, clinical instructor and/or staff active presence influences student empowerment and courage, sense of purpose, increases understanding, helps the student feel a greater sense of control, and provides the student with a sense of emotional support. Lack of active presence increases the risk of student self-questioning, feelings of helplessness, decreased understanding, decreases the student's sense of control, and does not contribute to the student's emotional support.

After the critical event period is the post-event period. Several elements of the critical event period affect the post-event period, such as the student's role during the event, the student's in-event stress response, and actively present, supportive faculty and/or staff, and are depicted in the bottom inner ring. The post-event period begins after the critical event ends, and post-event response is affected by immediate debrief, which has the potential to decrease student anxiety, provide closure, increase understanding, provide emotional support, provide the student time to process, and provide validation for students' thoughts and feelings. Lack of immediate debrief prolongs psychological distress, including anxiety, fear, guilt, and acute stress, decreases student understanding, leads to students 'push through,' prolongs feelings of second-guessing, and does not provide validation.

Feelings of isolation occur after the event, whether students receive support or not. Isolation is a feeling of having experienced something that is profound and life-altering that others cannot relate to or understand because they were not present. These feelings, along with post-event stress response, affect the aftermath. Students who

witness critical events see them as learning experiences. Student support in the aftermath, including home support, frequent faculty follow-up, and professional help if needed, help increase coping, help lead to post-event growth. Lack of support can lead to decreased coping, prolonged psychological distress, and greatly increases the risk for psychological trauma.

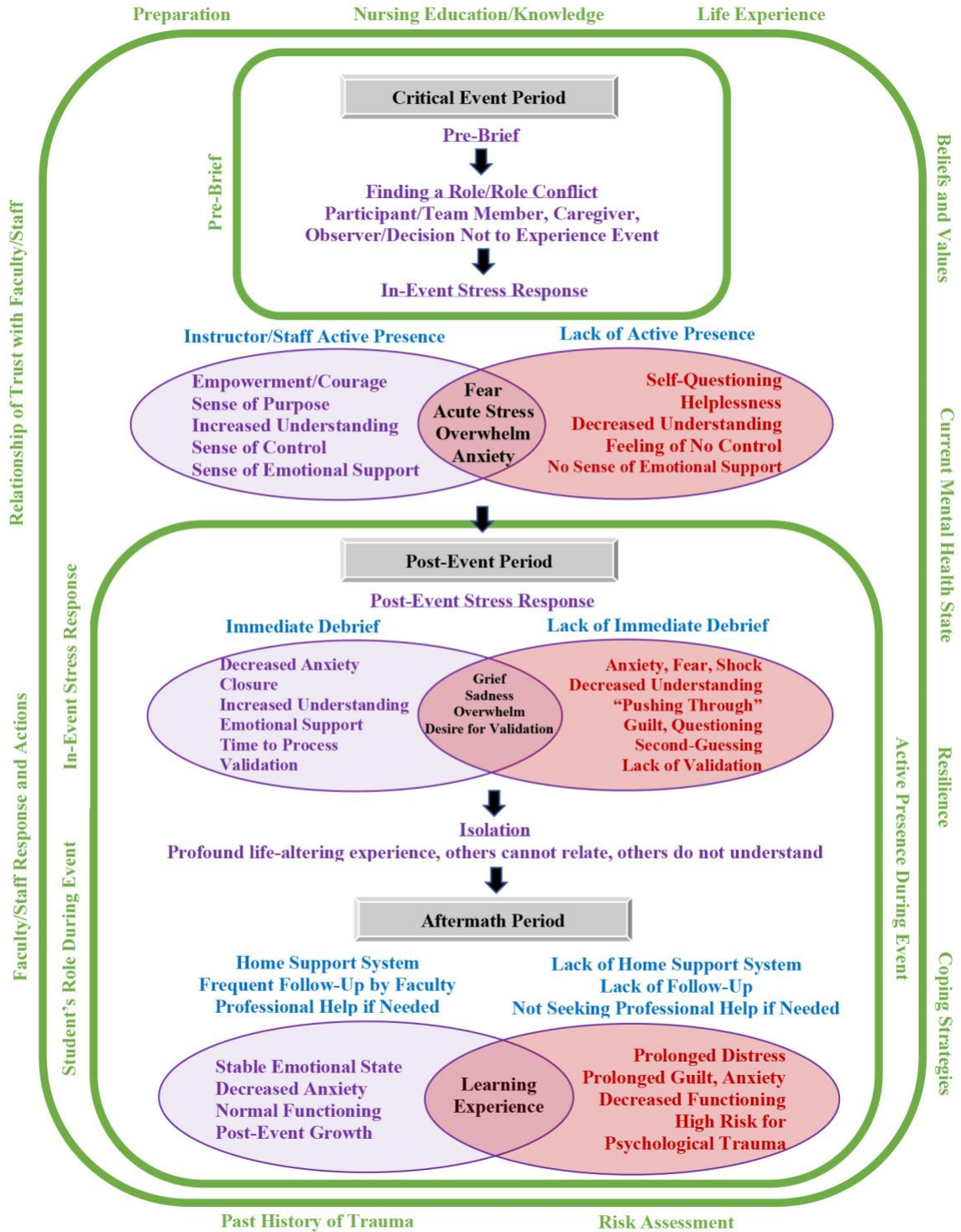


Figure 1. Model: Student Nurse Support and Recovery Through Critical Events in the Clinical Setting



## Summary

With the intent to better understand the relationship between various forms of student support and preparation, and the development of psychological trauma after witnessing critical events in the clinical setting, I conducted a qualitative grounded theory study within the lens of social constructivism to explore the experiences and perceptions of 14 undergraduate student nurses from three universities who had experienced critical events in the clinical setting. I analyzed over 170 pages of transcribed data, notes, memos, e-mails, and curriculum using the four steps of grounded theory methodology 1) primary open-coding, 2) axial coding, 3) selective coding, and 4) final conditional matrix stage to develop the Theory of Student Nurse Support and Recovery Through Critical Events in the Clinical Setting.

I began with 50 open-coding categories which were further analyzed during axial coding and combined into nine primary categories and nine secondary categories. Primary categories included 1) Relationship of Trust, 2) Preparation, 3) Finding a Role/Role Conflict, 4) Clinical Instructor/Staff Active Presence, 5) In-Event Stress Response, 6) Post-Event Stress Response, 7) Immediate Debrief, 8) The Aftermath, and 9) Coping/Resilience. Secondary categories included: 1) Nursing Education/Knowledge, 2) Life Experience/Beliefs and Values, 3) Pre-Brief, 4) Clinical Instructor/Staff Emotional State/Actions, 5) Isolation, 6) Validation, 7) Risk Assessment, 8) Home Support System, and 9) Post-Event Growth.

During the selective coding stage, I gained an understanding of the relationships between categories, leading to the articulated theory and accompanying visual model. The theory can be described by the following core ideas:

1. Students need active faculty and/or staff support during critical events. Active support positively affects in-event stress response, post-event stress response, and coping/resilience.
2. Pre-briefing is an impactful part of knowing what to expect. Pre-briefing affects student in-event stress response and finding a role in the event.
3. Nursing knowledge, life experiences, values, beliefs, coping skills, resilience, current mental health state, and prior history of trauma affect all aspects of critical events. These factors affect how prepared a student is to witness a critical event, the role the student chooses to take in patient care, in-event stress response, post-event stress response, post-event coping and resilience, and psychological recovery.
4. Students experience feelings of psychological distress during critical events. These feelings carry over into the post-event and aftermath stage.
5. Immediate debrief positively affects post-event stress response and long-term coping/resilience by providing the opportunity for students to gain closure, decrease anxiety, increase understanding, time to mentally process the event, and emotional support.
6. Lack of debrief increases post-event psychological distress and decreases long-term coping and resilience.
7. Students experience a period of isolation after critical events due to the in-event stress response and the uniqueness of the event.
8. Grief, sadness, overwhelm, and wanting validation are common feelings expressed after critical events, even with adequate debrief.

9. Support after critical events should continue in the days, weeks, and months following the event. Students should be monitored for signs of increased psychological distress and psychological trauma and provided resources for help in coping.

10. Students who do not receive adequate support prior to, during, or after a critical event are at risk for psychological trauma.

11. Nursing knowledge, life experience, beliefs and values, resilience, coping strategies, past history of trauma, current mental health state, and relationship of trust with faculty and or/staff affect all aspects of the critical event. Faculty can help develop student coping strategies prior to the event, and after the event, to aid in psychological recovery.

12. Adequate support before, during, and after critical events leads to post-event growth, where positive learning experiences, new knowledge, and enhanced coping mechanisms and resilience are used to better prepare students for future critical events.

This theory can be applied to understand how the relationships between Relationship of Trust, Preparation, Finding a Role/Role Conflict, Clinical Instructor/Staff Active Presence, In-Event Stress Response, Post-Event Stress Response, Immediate Debrief, The Aftermath, Coping/Resilience, Nursing Education/Knowledge, Life Experience/Beliefs and Values, Pre-Brief, Clinical Instructor/Staff Emotional State/Actions, Isolation, Validation, Risk Assessment, Home Support System, and Post-Event Growth influence the development of psychological distress and psychological trauma, and the ability to recover from psychological distress and psychological trauma

in undergraduate student nurses. The implications of the proposed theory, contributions to the existing literature, contributions to nursing education/recommendations, study limitations, and recommendations for future research are described in Chapter V: Discussion and Conclusions.

## **CHAPTER V**

### **DISCUSSION AND CONCLUSIONS**

#### **Implications of the Proposed Theory**

Prior to conducting this study, I was only aware of the experiences of a few students over the course of many years who had struggled after witnessing something traumatic in clinical. I knew that the problem existed, but I was not aware of how common the problem was. Through this one study of students in a small area of one state in the United States, I found what I consider to be a large number of students who had witnessed a critical event. Most experienced the event within the past year, and one within the past 18 months. Though unpredictable, awareness of how common critical events are in clinical is crucial, so faculty can plan for them in advance and prepare students. There is a chance that a student nurse will never witness a critical event during his/her time in nursing school, but there is also a chance that they will witness something that leads to serious mental health consequences. During the course of this study, my colleagues shared with me stories of other students who were not part of this study, and there are surely more out there that faculty do not know about who are suffering.

After extensive review of participant interviews, notes, and supplemental emails and other materials, and completion of primary, axial, and selective coding, it became even more clear that 13 of the 14 participants in this study experienced psychological distress related to the critical event, and of the 13, two participants experienced what would be described as psychological trauma, one resulting in PTSD, and one who

reached crisis when lack of support and coping mechanisms lead to thoughts of suicide. Though these conditions could have applied to more than these two participants, conclusions could only be made through data that participants chose to share.

One participant in this study witnessed three critical events on two separate clinical days resulting in one known patient death, and one unknown patient outcome. This participant did not have a clinical instructor present for the beginning of the first event, and was ignored for the majority of the shift by the staff nurse, who was unsupportive, and pressured the student into participating in both events. The student's clinical instructor arrived near the end of the first event and helped coach the student through chest compressions. After the first event, the student was left alone with the deceased patient, which increased post-event anxiety. The student had not taken critical care courses and had not yet participated in simulation and did not feel prepared for what was witnessed. During the second event the clinical instructor was present, and the student again participated. The student was able to discuss the events at post-conference, but had difficulty coping after the events, and experienced symptoms consistent with PTSD, such as psychological distress, intrusive thoughts, and flashbacks. The student reached out for help from faculty, who referred the student to the student health center. The student received psychological care and mental health treatment several times, and also met with the clinical instructor in his office several times to discuss the event to ask questions and receive validation. During the third event, the student's clinical instructor was not present, but the student had the support of another student nurse in the room, and the student's clinical instructor came shortly after the event to debrief. The student was also able to discuss the event in post-conference, and felt that psychological counseling

after that event was not necessary. The student felt it took just under one year to psychologically recover from the events, and was very tearful during our interview.

The other student who described PTSD symptoms witnessed a trauma and subsequent death of a young man in the emergency room during a study abroad trip. This student did not have the support of the staff due to language barriers, and was unable to understand what was happening. The student did not have a clinical instructor present at the start of the event, but the clinical instructor came in partway through. The clinical instructor was able to teach the student what was happening based on his clinical work experience. The student had not yet taken critical care courses or participated in simulation, and did not understand the medication and treatments that were being provided; however, another student who was in a cohort one year ahead was present, and was able to support the student through chest compressions and explain as much as she was able. The student did not ask questions during the event, and was left with many questions afterward. No debriefing was offered, and no follow-up from the clinical instructor was provided. The student was unable to contact her home support network by telephone due to the time difference between countries, and did not feel comfortable discussing her thoughts and feelings with her instructor or her peers. During the study abroad trip, the student experienced suicidal thoughts, and had thoughts of jumping off a cliff during a hiking trip, and tried to avoid any further traumatic clinical experiences during the rest of the four-week trip, not wanting to participate in clinical after the event. The student never received any psychological counseling, and did not discuss the event with her spouse until the night before our interview, nearly one year later.

Psychological trauma is severe psychological distress that results from acute or chronic mental or physical trauma, complex trauma, developmental trauma, physical or emotional neglect, vicarious/secondary trauma, workplace violence, historical trauma, system-induced trauma, second victim trauma, trauma from disasters, and any event that causes severe psychological distress. Psychological trauma may lead to outcomes such as anxiety, depression, acting out, aggression, emotional dysregulation, ASD, or PTSD (Foli & Thompson, 2019). Post-traumatic stress disorder refers to intense physical and psychological stress reactions that are caused by an event, or multiple events or circumstances, that an individual finds physically or emotionally harmful or threatening (SAMHSA, 2014). For those older than six years of age, the American Psychiatric Association's diagnostic criteria for PTSD are:

1. Exposure to the threat (direct experience, witnessing an event, learning of a close friend/family member's experience, experiencing repeated or extreme exposure to an event)
2. One or more intrusive symptoms related to the trauma (recurrent, involuntary distressing memories, dreams, or dissociative reactions, such as flashbacks, psychological distress, and physical reactions related to the event)
3. Avoidance of stimuli of the event (evading memories, thoughts, and feelings as well as external reminders)
4. Alterations in mood and cognition after the event (loss of memory regarding the event)
5. Experiencing reactions and arousals associated with the event (loss of memory regarding the event)
6. Experiencing reactions and arousals associated with the trauma
7. Symptoms lasting for more than one month
8. Functioning that has been impacted (social, occupational, and so on)
9. Symptoms that cannot be attributed to substances or a medical condition (APA, 2013, p. 271-272)

If individuals are not able to cope with psychological trauma from critical events, crisis may occur. A crisis results from critical events overwhelming one's usual coping mechanisms, resulting in impaired functioning or psychiatric symptoms or disorders



(Everly & Mitchell, 1999). “Typically, these critical incidents are specific, often unexpected, sometimes potentially life-threatening, time-limited events which present the individual with loss or threats to personal goals or well-being” (Flannery, 1999, p. 77). The impact of this study became stronger as I interviewed each participant. Each had powerful experiences to share, but these two students’ experiences stand out most. Psychological trauma can lead to crisis, and it is imperative that faculty prepare students, support students, and follow-up with students to help prevent PTSD or crisis.

The importance of mentally and emotionally preparing students to witness critical events in the clinical setting cannot be stressed enough. Awareness that students may have decreased coping skills, a history of personal life trauma, unique cultural or spiritual beliefs, and/or a history of anxiety, depression, or PTSD should be on the forefront when planning and executing clinical experiences. Faculty should be aware of the importance of pre-clinical risk assessment, assessment of support systems, education regarding coping and stress, active presence during critical events, and the importance of debrief and follow-up. Without adequate preparation and support, students are at risk for psychological trauma. Faculty should also be aware that what is determined to be psychological distress and/or psychological trauma will differ among students. What is traumatic to one, may not be traumatic to another. As stated by one participant: “Whether you drown in a bathtub of water or an ocean, you still drown. So, it's not a game of whose is worse. Trauma is trauma.”

### **Contributions to the Existing Literature**

Results from this study support findings from the literature on the value of trust relationships between students and faculty (Owen & Zwahar-Castro, 2007; Zieber &

Hagen, 2009). Results also support findings from the literature on the importance of faculty presence during emotionally difficult situations such as patient death, and the role faculty play in preparing, supporting, and debriefing students through emotional difficulties (Carson, 2010; Eifried, 2003; Heise & Gilpin, 2016; Huang et al., 2010; Parry, 2011). The literature contains a great deal of information on psychological distress and trauma among practicing nurses, but the topic of student nurse psychological distress and trauma resulting from witnessing critical events is grossly underrepresented.

The majority of research on the topic of student nurse distress in the clinical setting is phenomenological research related to patient death. The literature is lacking in data related to student experiences with other forms of critical events, such as trauma (loss of limb, risk of loss of life), emergent delivery, organ harvest, pediatric rapid response, respiratory failures, brain-attack (stroke), and other forms of emergency care, as well as specific methods of follow-up and monitoring of students after witnessing critical events in the clinical setting. There are currently no studies in the literature on the relationship between support before, during, and after critical events and the risk for psychological trauma, and there are no published theories that describe the relationship between student support through critical events in the clinical setting and psychological trauma.

### **Contributions to Nursing Education/Recommendations**

Based on the findings from this study, including participant descriptions of what they wished they would have been taught, and what they recommend, a list of recommendations for nursing education follows. A visual model of full recommendations for the pre-clinical period, the critical event period, the post-patient event period, and the

aftermath are detailed in each section (see Figures 2-5). Recommendations for each time period will be discussed individually.

### **Pre-Event Period**

The pre-event period spans the time from the student's first day of the nursing program, to entry into the clinical setting. During this time, faculty have the responsibility of establishing mentorship, building relationships of trust with students, assessing student support systems, coping skills, and mental health, teaching course content that helps prepare students for the mental, physical, and emotional aspects of clinical education, orienting students to the clinical site, and providing resources.

**Establish an understanding of faculty support/relationship of trust.** Students in schools of nursing may be intimidated by faculty, or may feel inadequate if feelings of fear or stress are brought to faculty's attention. "The vulnerability felt in the presence of suffering can be compounded by the fear of appearing inadequate in the presence of the clinical instructor" (Eifried, 2003, p. 63). In the clinical setting, students describe a desire for closer relationships with their clinical faculty, and value a sense of connection (Owen & Zwahar-Castro, 2007; Zieber & Hagen, 2009). Establishing a relationship of trust early in the program helps students feel at ease with faculty, and more likely to approach them when they need emotional support. Faculty can establish relationships of trust by checking in with students one-on-one to see how they're doing, asking about student's experiences, learning about their backgrounds, and reminding students often that they are available if students need help. Trust is also established by body language. Being physically approachable, smiling, and being friendly helps students feel more comfortable.

**Mentorship/advisory program.** Many schools of nursing have advisory programs and mentors who are assigned to students for the purpose of monitoring academic success. These mentors can also play an additional role as student support systems as long as students feel comfortable discussing personal emotions with them. This trust relationship can be developed as early as the first one-on-one meeting with the student. Taking an extra minute to let the student know the mentor or advisor is there for them if they need to talk can help build trust and help the student feel at ease.

**Pre-clinical risk assessment.** A theme that repeated throughout the data was the need for pre-clinical risk assessment. Several recommendations for elements of a risk assessment were suggested by participants, and additional recommendations were made based on analysis. Three major elements of the pre-clinical risk assessment include assessing the students' 1) current mental health, 2) current coping skills, and 3) personal support system. Elements of the risk assessment may be kept private or disclosed to faculty, but if disclosed, the decision to share this information should be the student's, and no student should ever be required, pressured, or coerced into sharing. Assessment of current mental health, coping skills, and home support system can be done through in-class worksheets with questions for students to fill out. Self-identification of these three elements will bring awareness to the student of their own strengths and vulnerabilities.

Students may have a personal history of trauma that may trigger psychological distress or trauma in the clinical setting. Historic events such as personal history of abuse or neglect, drug or alcohol abuse, eating disorders, death of a loved one, death of a child during childbirth, pregnancy loss, involvement in an accident or other emergency, mental health conditions, military service, prior career in law enforcement, fire department, EMT

or paramedic, among others, may increase student risk for emotional distress or psychological trauma. Eight of the 14 participants in this study disclosed a history of mental health conditions or personal life trauma such as PTSD, anxiety, death of a child, recent death of an extended family member, recent friend's suicide, panic attacks, and depression. Though faculty are not able to require students to disclose such diagnoses, students may benefit from identifying personal histories and understanding how these histories may affect reactions to future trauma. Students can self-identify, keeping the information to themselves if they are not comfortable sharing, or may choose to discuss these topics with faculty in order to make didactic and clinical instructors aware.

**Assess current coping skills.** Development and improvement of coping skills not only helps in the clinical setting, but in all aspects of nursing education, yet there is little data in the literature comparing specific coping strategies to student nurse stressors (Labrague et al., 2018). Participants in this study varied in their coping skills. Participants described a wide variety of coping methods such as hobbies, talk therapy, and reflective writing. Some participants had a history of mental health therapy and have developed coping skills over time. Identification of strengths and weaknesses in coping may benefit students in helping them brainstorm possible coping techniques they could use if needed. Assessment of coping skills can include methods students use to deal with stress, hobbies, unhealthy coping mechanisms, and coping skills students may wish to improve on.

**Assess personal support system.** Identifying one's personal support system before a critical event may help students obtain emotional support earlier. Knowing who to turn to, and having a list of names and phone numbers gives students a list of possible

support options they can call once they leave the clinical setting and return home. A home support system could include parents, spouse or significant other, adult children, roommates, friends, other students in the nursing program, faculty, the college's student health center or psychological counseling services, a local mental health provider such as a therapist or licensed clinical social worker, religious leaders, or co-workers. Faculty should emphasize that although students cannot disclose personal patient information due to the Health Information Portability and Accountability Act (HIPPA, 1996), students are able to discuss experiences and feelings in general and request support from those around them.

### **Course Content Recommendations**

In addition to pre-clinical risk-assessment, recommendations for course content were described. Recommendations include school of nursing didactic and simulation content.

**Coping and emotional preparation, and resources.** Ideally, prior to witnessing a critical event, students should receive education on the situation in order to fully prepare; however, it is not possible to teach students about every situation they may witness. Rather than focusing preparatory education on specific events, faculty may consider preparatory education on the general topics of stress and coping, self-care, mindfulness, death and dying, grief, secondary traumatic stress, compassion fatigue, burnout, psychological distress, and psychological trauma. Gates and Gillespie (2008) suggest that nurses be educated about their vulnerability to STS when working with traumatized patients, and be taught about the signs and symptoms, risk factors, and appropriate coping mechanisms.

Understanding what these signs and symptoms and risk factors are may help students to identify when they are faced with them, and help students better prepare for how to handle them. Grief can be an overpowering emotion and is often a neglected and unacknowledged issue in nursing education. It is crucial that nurse grief not only be recognized and accepted within the profession, but be addressed in schools of nursing, along with coping mechanisms and support resources (Loos et al., 2014). Students should be taught that their own personal emotions matter in critical events just as much as the patient's and family's emotions. During coping and stress education sessions, students should be given a list of resources including the university health center's telephone number and hours of operation and advised on whether psychological services are available. Other resources, such as 24-hour crisis lines, local mental health services, and faculty telephone numbers should also be provided.

A midwifery PTSD prevention program was recently developed, which has shown promising results for post-graduate midwives in practice. The program aims to education midwifery students on the nature of trauma responses, the development of PTSD, and strategies for self-management. Elements of this program could inspire similar programs for pre-licensure nursing programs (Spiby et al., 2018).

**Video/guest lecture/written account from other students.** Several students from one university mentioned curriculum related to psychological trauma in the clinical setting that they learned during the first or second semester of nursing school. The curriculum included a unit where students were taught about the risk of psychological trauma, and were shown several videos of prior students' experiences with witnessing critical events in the clinical setting. These videos, which I was able to watch, were

powerful testimony to the reality of psychological distress and trauma and the need for support systems and strong coping mechanisms. I recommend that schools of nursing develop similar videos, or share student experiences through written content, to help students learn from those who have experienced what it is like to be deeply, emotionally affected by what is witnessed in clinical. Based on student recommendations, however, this content should be re-introduced prior to entering critical care clinicals so that information is fresh in students' minds.

**High fidelity simulation.** High fidelity simulation is a teaching tool that was recommended by many participants. Simulation is a powerful tool that is used in many fields, and is effective in teaching students psychomotor skills and how to react in a simulated work setting through pre-brief, participation, and debrief (Shin, Park, & Kim, 2015). Code blue and emergent delivery are examples of commonly simulated events in nursing education, but too often, students witness events in clinical prior to being exposed to similar events in the simulation lab.

Training on trauma and resuscitation often does not occur during the first year of schooling (Loos et al., 2014). Schools of nursing may want to consider introducing some form of emergency response earlier in the program in case an emergency situation is witnessed during lower acuity clinicals. Simulation should not be left to the end of a student's education. Starting simulation early in a program, and repeating simulation over the course of many years has been shown to improve student learning (Zapko, Ferranto, Blasiman, & Shelestak, 2018). Faculty should consider having students participate in critical care simulation one semester prior to starting critical care clinicals, increasing the chances that exposure in a safe learning environment occurs prior to exposure in the



clinical setting. During simulation education, discussion regarding the possibility of patient morbidity and mortality even when healthcare workers perform cares and life-saving measures perfectly, is an important part of mentally preparing students for the chance that their efforts during a critical event, just like the efforts of the others in the room, may not always lead to desired patient outcomes.

Several participants in this study witnessed pediatric death or near-death situations, and were not prepared to see a young person die. Education in pediatrics should include the possibility that pediatric patients, just like adult patients, sometimes do not survive life-saving measures. Though difficult emotionally, faculty should have students participate in pediatric and infant death simulations in order to provide a safe place for debriefing and discussion. This provides students the opportunity to be exposed and strengthen coping mechanisms prior to entering the clinical setting.

Students also benefit from simulations of patient violence and aggression, family grief, patient confusion, fear, and pain. Live actors, rather than mannequins, are a valuable method for simulating these types of situations. Schools of nursing should consider working with other departments within the university, such as the theater department to have trained actors who are able to emit the emotions that are so common in critical events.

**Death and dying, and caring for the patient and loved ones during and after patient death.** Participants in this study discussed death and dying course content and its effectiveness in preparing them for the event they witnessed. In general, students felt that content was effective in preparing them for the events post-patient death, but did not prepare them for the psychological distress during the death process or how to respond to

family members. Death and dying course content can be combined with the above curriculum recommendations, but does not appear to be effective when used alone.

**Recorded video of a live code situation.** Another form of education that participants stated would be helpful is witnessing a traumatic event, such as a code blue, on video prior to entering the clinical setting. Because physiologic changes cannot be simulated, such as skin turgor and color, mottling, cyanosis, flaccidity, and loss of bowel and bladder control, viewing a code blue with compressions and implementation of advanced cardiac life support (ACLS), including mechanical compressions using a Lucas machine (Lucas, 2020) allows students to learn and debrief in a safe environment, with time to process and ask questions. Videos of such events can be found online, or schools of nursing may consider collaborating with a local hospital to obtain censored video footage of a code or trauma with patient identifiers removed. Many trauma centers video and audio record events in trauma bays in order to debrief and review with staff and improve practice. The sights and sounds of real events are not the same as those portrayed on television. Seeing videos of real events may prepare students for the brutality of the real situation.

**Pre-clinical preparation course.** More emphasis needs to be placed on the pre-clinical period. Though students often get a short welcome when entering a clinical facility, more needs to be done to help orient students to their surroundings and help students know what they might expect to see. Education on the type of facility, such as level of trauma center, for example, and resources available at each facility helps students better understand reasoning for certain care measures. If students understand that the facility does not have the ability to treat certain patient conditions, they will understand

why patients are not taken directly to the operating room, or why air transport is called. Pre-clinical preparation courses also give students the opportunity to tour the facility, meet facility management, educators, chaplains, and other resource personnel, and learn about facility-specific policies and procedures.

**Unit-specific education and orientation.** When a student is scheduled to be in a specialty area, faculty should spend a moment with the student explaining what to expect. For example, the day a student is going to the operating room the clinical instructor should talk with the student about the smells and sounds they may experience. Prepare students for the cold environment, explain why operating rooms are kept cooler than regular rooms. Students need to know about what sterile drapes, microscopes, and surgical tables and stands are, and that they cannot be touched without first scrubbing and donning sterile gloves and gowns. Instructors can explain a few of the procedures students might witness, and prepare them for the amount of blood involved. Students should be aware that they might see drills and saws, retractors, x-ray machines, and that the sights and sounds can be overwhelming to some. Students should be encouraged to eat a snack beforehand, and explain what to do if they become dizzy or lightheaded. Instructors should explain the attire they will be wearing, and that it is normal if students feel hot or claustrophobic, and encourage them to speak up if they become uncomfortable. Students should know that they can contact instructors anytime if they need to. Finally, faculty should talk with the students about whether or not they will be able to participate if an emergency arises, and what possible roles the student could assume in such situations.

A summary of pre-clinical recommendations, including mentorship programs, establishment of trust relationships, pre-clinical risk assessment, school of nursing didactic and simulation course content, and pre-clinical course content is summarized in Figure 2: Recommendations: Pre-Clinical Period (see Figure 2).

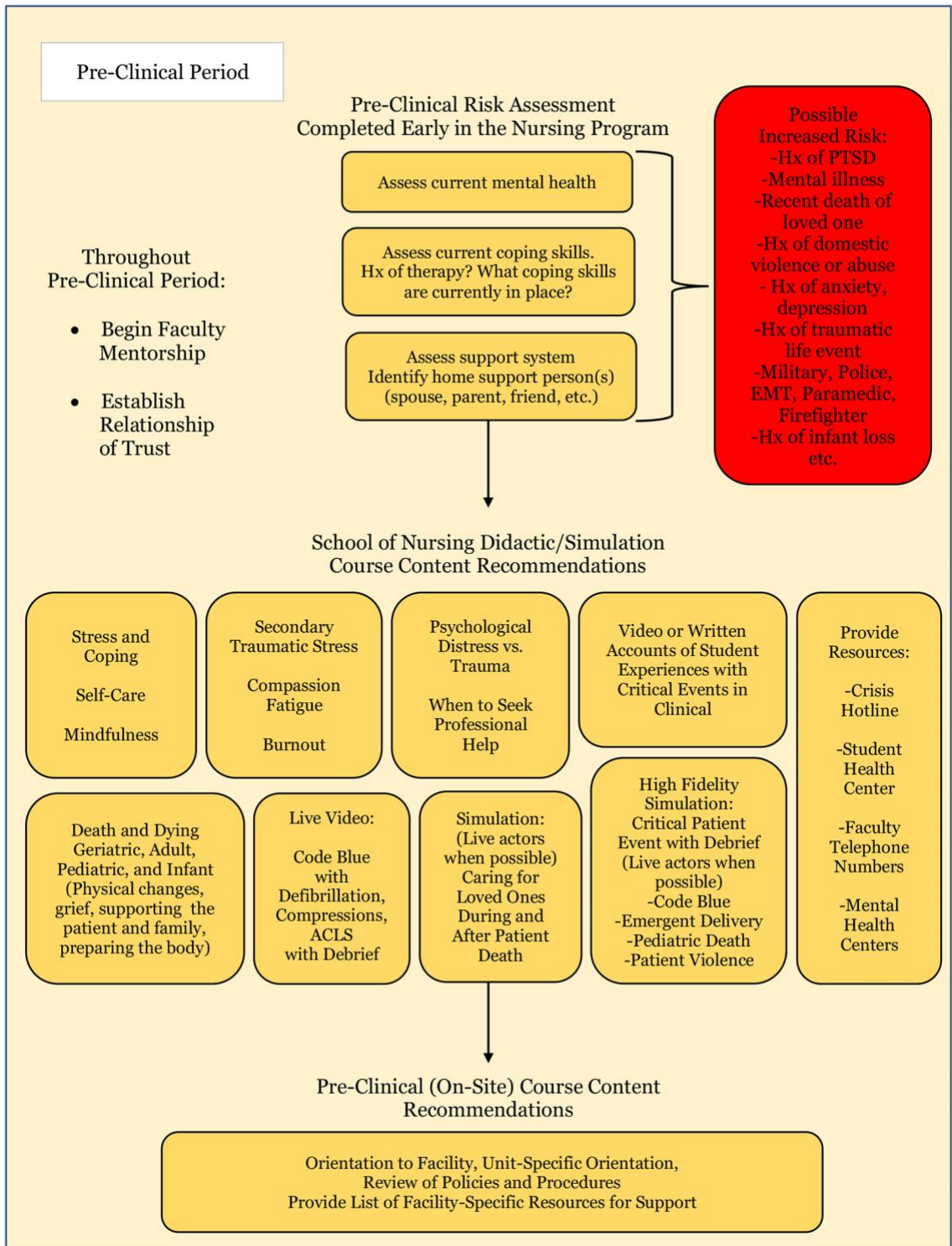


Figure 2. Recommendations: Pre-Clinical Period

## **Critical Event Period**

The critical event period spans the time from the beginning of the critical event, to the end of the critical event. During the critical event period, pre-brief and active presence of the staff nurse and/or clinical instructor is recommended. When not available, active presence of other medical staff or another student nurse may help decrease risk for psychological distress or trauma.

**Pre-brief.** Whenever possible, pre-brief is recommended for students to help prepare them for what they may see, and how they may be involved. Pre-brief had a significant positive impact on participants who witnessed critical events and helped decrease anxiety. Pre-brief may not always be possible, however. Sudden change in patient condition is not always anticipated, and often emergency situations occur without time to talk through the anticipated event. Pre-brief can be conducted by the staff nurse, the clinical instructor, or by another medical professional who is familiar with the anticipated event. During pre-brief students should be reminded that critical events are often unpredictable, and events can unfold differently than what is anticipated.

**Fully present staff or clinical instructor.** Studies demonstrate that students prefer to have their clinical nurse educator with them to help them through clinical experiences involving patient death, helping with feelings of inadequacy and fear (Carson, 2010; Heise & Gilpin, 2016; Huang et al., 2010; Parry, 2011); however, the literature is lacking on studies involving other types of critical events. Participants in this study benefited from the active presence of a staff nurse, clinical instructor, or other medical staff who were available to remain with the student, explain what was happening, teach about treatments and rationales, and answer questions during critical

events. The term “active presence” was chosen to emphasize the difference between being in close proximity to the student, and actively being engaged with the student by providing emotional support, encouragement, education, and feedback. Data from this study demonstrate that there was no difference between the active, engaged presence of hospital staff and the active, engaged presence of a clinical instructor. Balance between encouragement and pressure should be considered when assigning students tasks during critical events. If students do not feel comfortable performing certain tasks, faculty and staff should talk with the student about whether it is best to teach the skill and guide the student through it, or allow the student to opt-out and observe as others perform the task. In this study, faculty and staff who were actively engaged helped students find a role in the event they were comfortable with, and encouraged participation in elements of the event without causing feelings of pressure. Actively present faculty and staff gave students confidence in performing new skills and provided feedback.

Having support personnel in the room but not ‘fully present’ and engaged with students was not found to be as helpful to students in decreasing fear and anxiety. Hospital staff may be unable to discuss and teach during a critical event if they are needed for direct patient care, so having the clinical instructor or another medical professional or social worker to fill the role may be helpful for students witnessing critical events. Providing students with a telephone number where they can contact the clinical instructor immediately allows the student to call as soon as a critical event is anticipated, and clinical instructors should do their best to be actively present and engaged with the student during the event. When a student is precepting/in capstone and

unable to have the presence of a clinical instructor, either the preceptor or other medical staff should be available to support the student during the event.

A summary of recommendations during the critical event period, including pre-brief, active presence of a staff nurse and/or clinical instructor, and presence of other support staff, as well as relative risk, is detailed in Figure 3: Recommendations: Critical Event Period (see Figure 3).



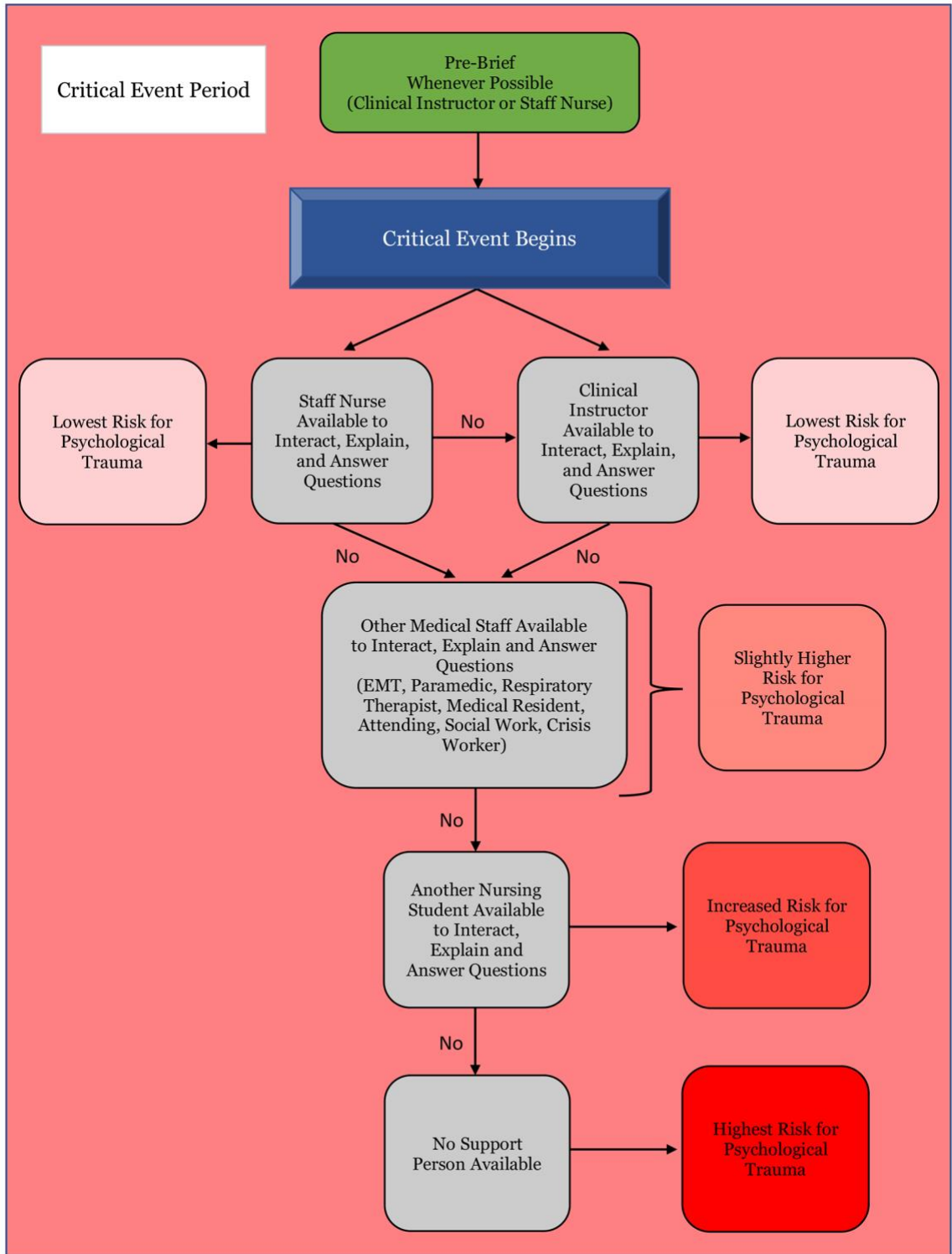


Figure 3. Recommendations: Critical Event Period

## **Post-Event Period**

The post-event period begins when the critical event ends, and concludes when the student leaves the clinical site. This period is often when those involved in the patient's care begin to process the event, and have the time to think about their actions, thoughts, feelings and emotions. Many participants in this study described the post-event period as being a time when adrenaline decreased, and a new form of distress set in. Participants described feeling "out of body" and questioning "did that just happen?" Post-event feelings and emotions varied, based on factors such as the event itself, preparation, the level of support, level of participation, coping mechanisms, and the patient's outcome. The most common desire among participants in the post-event period was immediate debriefing.

**Immediate debrief.** Debrief after witnessing critical events should occur immediately after the event whenever possible. Students in this study benefited from being able to process what they witnessed and discuss rationale for treatment and factors involved in patient outcomes. Immediate Debrief, as opposed to hospital debriefing or post-clinical conference, was most effective in decreasing Post-Event Stress Response, but was not always possible.

Lack of debrief immediately after the event increased participant anxiety, stress, and fear, and caused students to emotionally 'push through' the rest of the shift, increasing the risk for post-event psychological distress. Immediate debrief one-on-one with faculty or staff should include a summary of the event, treatments involved, treatment outcomes, feedback on student involvement, discussion about how the student is feeling, and an opportunity for the student to process what they just witnessed. Faculty

and/or staff should encourage the student to talk about concerns and questions, letting the student know that it is okay to feel whatever they are feeling. Faculty and/or staff should also encourage the student to take a break and walk away from the setting for a few minutes to process and breathe.

**Hospital/facility debrief.** With or without an immediate one-on-one faculty or staff debrief with the student, hospital debrief was an effective method for increasing understanding and providing emotional support for participants. During this type of debriefing, hospital personnel invite all staff who were involved in the event to discuss the event in a private location. Depending on the event and the patient outcome, social workers and/or chaplains may also be invited to attend. Hospital/facility debrief allows students to learn from physicians, residents, nurses, and other involved personnel, and receive validation for their thoughts and feelings. Participants in this study were positively affected by witnessing staff emotions, which validated personal anxiety, fear, and grief. Participants also benefitted from gaining a more thorough understanding of treatment rationales, why the patient responded a certain way, and why the outcome occurred. Participants who were able to attend hospital/facility debriefings felt welcomed and respected as team members. Having a deeper understanding of the event led to better post-event coping.

**Debrief in post-conference, elimination of mid-conference.** The literature supports clinical post-conference as an effective method for fostering critical thinking through reflection and linking theory to practice (Myrick & Yonge, 2002; Oermann, 2008), and is often an un-structured environment where clinical instructors are free to conduct learning as they feel appropriate (Harvey, 2015). Because post-conference is

traditionally a time for reflection, it is usually held at the end of the clinical day; however, some schools of nursing are opting for mid-day conference.

Though post-conference is often used to discuss the events of the day and what can be learned, there is little in the literature about using post-conference as a time to receive support after witnessing traumatic or emotionally difficult events. Hosting mid-conference rather than post-conference means that students are only able to discuss events witnessed during the first half of the shift. Even if post-conference is held at the end of the day, the intent is for all students to debrief. A student who needs extra time and support may need additional time with the clinical instructor after post-conference. Data from several participants in this study demonstrate that although post-conference allowed them to discuss their experiences, often the clinical instructor needed to stay longer to talk with the student one-on-one in order to provide adequate support. Faculty who teach in the clinical setting should be prepared to stay at the facility longer in case students need support and additional debriefing time. Also, students who participated in mid-conferences were not able to debrief because the critical event occurred near the end of the clinical day. Though post-conference can be used for post-event support, it is recommended that it be paired with immediate debrief, and held at the end of the clinical day rather than mid-day.

The effectiveness of debriefing was influenced by two factors: the immediacy of the debrief, and the adequacy of the debrief. Whether Immediate Debrief was possible or not, debriefing shortly after during the hospital debrief, or debriefing with the clinical instructor or staff nurse later in the shift was also of importance. A combination of one-on-one debrief, hospital debrief, and post-conference debrief was the most effective for

increasing coping among participants. Recommendations for post-event support and effectiveness are summarized in Figure 4: Recommendations: Post-Event Period (see Figure 4).

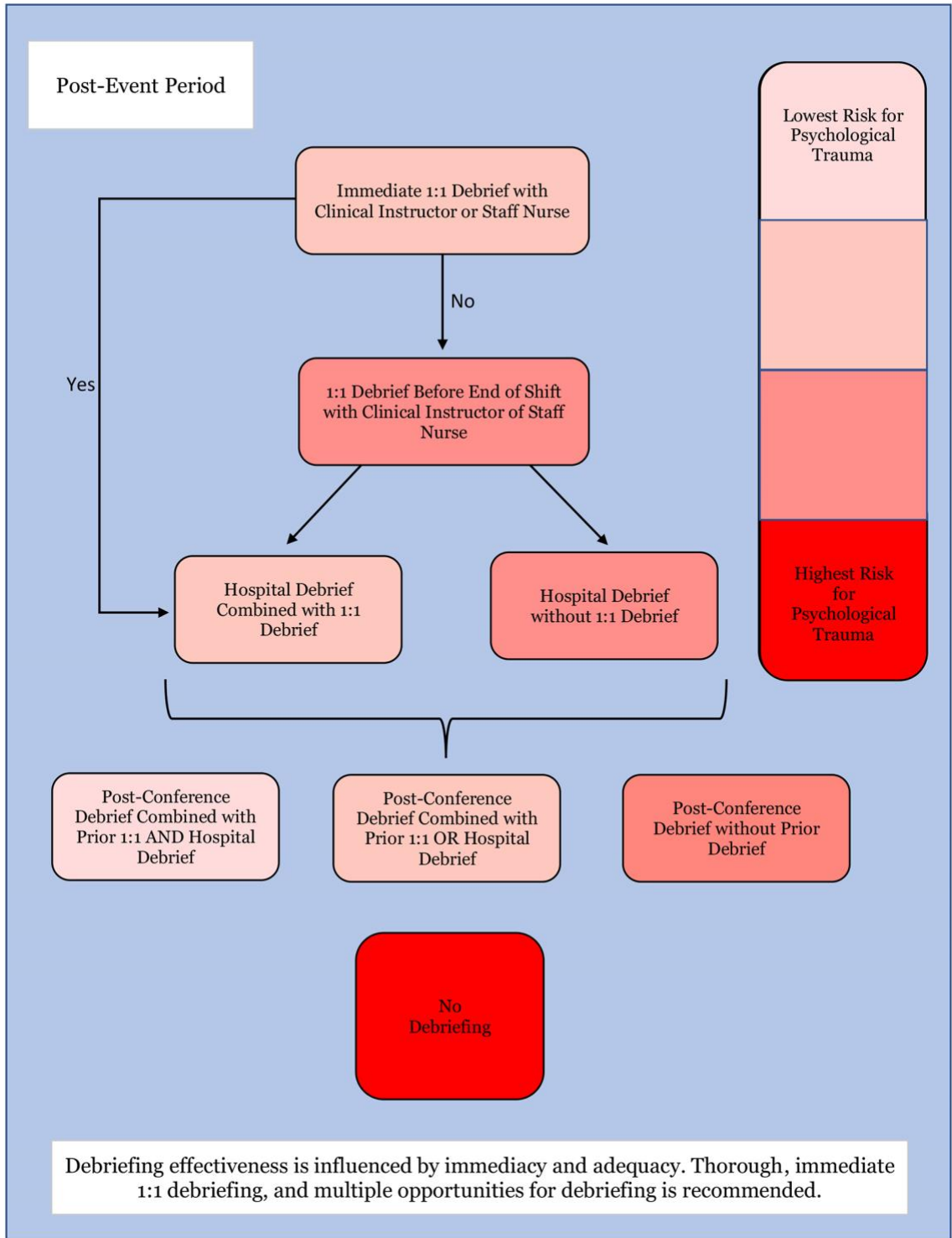


Figure 4: Recommendations: Post-Event Period

## **Aftermath Period**

The aftermath period begins once the student leaves the clinical setting, and continues days, weeks, and sometimes months after the event. During the aftermath period, students need a home support system, as well as follow-up from faculty and/or staff. Though some participants felt they coped well after the event, once they left the clinical facility, the emotions came “flooding in.” Some participants described the drive home as being mentally and emotionally draining. Participants recalled feeling overwhelming feelings of second-guessing actions, questioning, sadness, and anxiety. Once returning home, the impact of a home support system was evident. Participants appreciated the ability to discuss feelings and emotions with friends and loved ones, as well as faculty, and felt that talking helped with coping, decreased isolation, and helped improve validation. Participants who described a relationship of trust with faculty, felt that talking with faculty provided a safe environment for processing. Those who did not receive faculty follow-up felt more isolated and alone, and less cared for.

**Faculty/clinical staff follow-up and at-home support system.** Data from this study demonstrate that faculty often do not realize that students are suffering, or may not have home support systems to turn to after leaving the clinical setting. Often, students did not feel comfortable becoming emotional in front of faculty, or did not feel comfortable discussing feelings or concerns. Some students did not feel they needed faculty support due to strong family support; however, others did not have family or friends who were available to talk, or did not understand the impact of the event on the student.

Most participants experienced a period of time when they felt isolated and in need of validation. Students felt alone, that no one else could understand what they were going

through, and often wondered if what they were feeling was normal. Students need a post-event support system. This support system should include faculty and an at-home support person or persons who the student trusts and feels comfortable expressing feelings with, and who can provide a caring environment and resources for the student to help in psychological recovery. The student's preceptor can also serve in this role, if the student has the ability to contact them and feels comfortable with them.

Student recovery demonstrated that events can have an impact for anywhere from a few days to a year or longer. Some participants in this study felt 'normal' again after a couple of weeks, and for others, they were still struggling emotionally one year later. Some needed family support, others needed faculty support, and some needed psychological evaluation and treatment. It is recommended that faculty follow-up with students the day of the event, the day after, once a week for four weeks, and several times throughout the next year. As was mentioned under 'Course content recommendations,' faculty should provide students with the university health center's telephone number and hours of operation, telephone numbers for 24-hour crisis lines, contact information for local mental health services, and faculty telephone numbers. This should be done pre-clinical, but resources can also be given a second time post-event. Faculty can also provide suggestions for coping mechanisms, such as reflective writing, hobbies, mindfulness and grounding techniques, and religious/spiritual support.

Faculty and other support persons should monitor the student for signs of psychological trauma and crisis, and should help the student receive psychological counseling if necessary. If students are not able to focus, not able to participate in daily life tasks, are having flashbacks that cause worsening psychological distress, have



extreme mood swings, severe anxiety or panic attacks, appear overly sad or overcome with grief, or appear withdrawn, faculty should work directly with the student and their support system to determine if professional help is needed.

A summary of recommendations for support in the aftermath period, including home support systems, coping strategies, frequent follow-up, resources, and professional help if needed are detailed in Figure 5: Recommendations: Aftermath Period (see Figure 5).



Figure 5: Recommendations: Aftermath Period

## **Unique Circumstances- Study Abroad**

Nursing students may have the opportunity to participate in study abroad clinical learning experiences during their time in nursing school. These experiences offer the opportunity for students to experience healthcare practices in different countries and cultures, and compare and contrast nursing care abroad to nursing care within the United States. Though these experiences can be positive, enriching opportunities with lifelong impact, there may be increased risk for psychological distress and psychological trauma for student nurses who witness critical events abroad without the support of interpreters or actively present clinical instructors who can explain what is happening during the event and debrief afterward. Cultural practices relating to healthcare should be taught prior to entering the country. Faculty can consult with local healthcare workers to discuss local beliefs and traditions that students may witness or participate in. Witnessing critical events can be very stressful for students nurses, but witnessing unfamiliar cultural practices coupled with medical care may add stress if staff or faculty are not able to explain rationale for what is being witnessed.

One participant witnessed the resuscitation and demise of a 17-year-old male in the emergency room during a study abroad trip. The patient had been run over twice by an automobile and quickly decompensated after arriving in the emergency department. Though the student was able to participate in the resuscitation by performing chest compressions, the student did not speak the native language of Mandarin Chinese, and therefore was not able to understand what was happening during or after the code.

Another study-abroad student was present during the event, and the two students were able to support one another during the event; however, the student's clinical

instructor did not debrief, nor did the staff, after the event. The student was left with many questions, and later developed psychological trauma. The student became withdrawn, did not want to participate in the rest of study abroad, and had suicidal thoughts during the remainder of the trip. The student was not able to connect with her husband due to the time difference between countries, and did not have a home support system to debrief with. The only opportunity she had to talk about the event was during a home-church event during study abroad where she was able to discuss generally what she went through with other students, but did not start to feel 'normal' until long after returning from study abroad. The event happened almost one year ago, and the student opened up to her husband about what she went through for the first time the night before our interview.

Based on this student's experience, I strongly recommend clinical instructor presence during the event, with immediate debrief of critical event; however, follow-up may be of even greater importance. Because study abroad students are away from familiar surroundings, family, and friends, support systems and coping mechanisms may be more limited, increasing risk for psychological trauma. Clinical faculty are encouraged to follow-up daily during the remainder of the trip, and watch for signs of distress. Clinical faculty may also want to weigh pros and cons when assigning placement in future assignments, and work with the student to determine whether the student feels he/she can handle more critical care experiences. Students can be encouraged to talk about thoughts and feelings often, and participate in reflective writing, such as journaling, to help process thoughts and emotions. If students appear to be in psychological distress,

they may need a day away from patient care, or may need to be assigned to units with lower acuity.

### **Unique Circumstances- Distance Learners**

One participant in this study was in an online RN-BSN program, and lived an hour away from campus. After witnessing a patient death in clinical, the student expressed his desire to have resources he could use closer to his home. The student was unable to use the university's health center for psychological counseling due to the long drive, and also was too far away from campus to be able to go to his instructor's office to talk. The student suggested that universities take into account the needs of online learners and provide resources that are not close to campus. The student also suggested that schools of nursing have a designated faculty member who is versed in psychological distress and trauma. This faculty member can discuss the event with students over the phone or via computer conference.

### **Study Limitations**

#### **Study Delimitations**

The findings from this qualitative grounded theory study provide new insights into the relationship between support and psychological trauma in student nurses who witness critical events in the clinical setting, but findings are unique to students in northern Utah four-year university-based schools of nursing, and may have limited generalizability until further research is done outside the geographical area of this study.

Participants for this study were limited to undergraduate prelicensure ADN or BSN students who had witnessed a critical event within the past year to year and a half. Limiting the population, and the amount of time since the event, eliminated other

potential participants who could have provided insight into the phenomena being studied. It is possible that students who experience psychological trauma from witnessing critical events could continue to be significantly affected two or more years after the event. The decision to include the chosen time frame was to potentially increase the student's ability to recall detailed memories.

### **Study Limitations**

Participants were referred through voluntary means and were not recruited by faculty or the investigator for ethical reasons. Due to the sensitive nature of the study, students may not have wished to volunteer their personal experiences and participate in the study, even if the experiences fit the criteria for the study. It can be assumed that more students suffering from psychological trauma from witnessing critical events in the clinical setting exist who did not participate; therefore, the data cannot be assumed to be inclusive of the overall population studied.

Participant responses cannot be guaranteed to be completely accurate due to memory lapses, or participants choosing not to be completely honest about the event due to the sensitive nature of the topic. All but two of the interviews took place face-to-face, either in-person or over computer conference. It is possible that participants feel uncomfortable talking about sensitive, painful, or embarrassing details with the researcher because a long-term trust relationship was not formed prior to the interviews. Though participants volunteered to participate, they may not wish to divulge all details of their experiences.

Participants had a variety of prior work experiences, life experiences, education, ages, and other differences that affected individual coping mechanisms and needs. As

stated in Chapter IV, some students had prior degrees or certifications in healthcare-related fields, and had prior work experience in healthcare or related fields, which may have contributed to stronger coping skills. Some participants also had prior mental health diagnoses of anxiety, depression, PTSD, and other diagnoses which may have helped or hindered coping, depending on whether participants already possessed strong coping skills prior to witnessing the event.

The study concluded in 2020 during the Covid-19 pandemic. Though several additional students contacted the investigator to participate in the study, increased stress and time constraints due to the pressure of finishing school online, conducting virtual clinical hours, and increased work stress, prevented those additional students from finding time to participate in the study.

### **Recommendations for Future Research**

Based on the insights of participants, and the positive impact that talking about their experiences had on participants in this study, I recommend the following for future research:

- It is recommended that research continue with students outside of Utah, and outside of the United States to gain a better perspective of those from other regions, from different backgrounds, different cultures, and different schools of nursing.
- I recommend research on graduate-level nursing students from clinical programs, such as Nurse Practitioner programs, to determine how coping mechanisms and resilience differ from undergraduate nursing students.

- I recommend that research on the long-term implications of witnessing critical events in the clinical setting be conducted to determine how the event affects the student several years later, and how the event impacts the student after graduation when practicing as a licensed nurse.
- I recommend research on the effectiveness of mid-clinical conference versus post-clinical conference.
- I recommend research on the effectiveness of the above curriculum recommendations, such as implementation of content on psychological distress, trauma, STS, CF and burnout.

### **Summary**

Student nurses need support before, during, and after witnessing critical events in the clinical setting. Support should begin as soon as the student enters nursing school, and should continue long after the critical event. Didactic instructors, simulation instructors, clinical faculty, staff nurses, and other hospital or facility staff play a role in student nurse support. Nursing knowledge, life experience, past history, coping, and resilience, among other factors play a role in student preparation for witnessing critical events in the clinical setting. Pre-briefing, active presence during critical events, adequate debriefing, and follow-up largely contribute to adequate post-event coping.

Student who do not receive adequate support before, during, or after critical events are at increased risk for ineffective coping, psychological distress, and psychological trauma. If adequately supported, and with adequate coping measures, student nurses have the potential for post-event growth, and increased coping and resilience, resulting in positive effects on their future careers as licensed nurses.



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**APPENDIX A**

**INSTITUTIONAL REVIEW BOARD  
APPROVAL**





DATE: November 21, 2019

TO: Tiffany Hood, PhD(c), MSN, RN, CNE  
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1514050-2] Student Nurses Who Witness Critical Events in the Clinical  
Setting: A Grounded Theory Qualitative Study

SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS

DECISION DATE: November 21, 2019

EXPIRATION DATE: November 21, 2023

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or [nicole.morse@unco.edu](mailto:nicole.morse@unco.edu). Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

**APPENDIX B**

**RECRUITMENT LETTER**

My name is Tiffany Hood. I am a doctoral student at the University of Northern Colorado, and I am looking for student nurses to participate in a research study to learn about the experiences of student nurses who have experienced a traumatic event, an unanticipated patient event, or a patient death (critical events) during clinical rotations with the past year that has caused emotional distress and has been difficult to cope with, and support received in relation to the event. Your commitment would involve an approximately 60-minute, in-person or telephone interview, or Skype interview, with the potential of a follow-up interview.

If you choose to participate in the study, your responses will remain anonymous. Participation in the study will help me gather data on how students cope with witnessing critical events in the clinical setting, and how clinical nursing faculty and staff nurses can best help students through difficult emotional situations they may encounter in the clinical setting. Information will also prove helpful in training future clinical nursing faculty and staff nurses on how to help students through difficult emotional situations.

Participation in this research is voluntary. If you are interested, please contact me through email and I will forward you further information about the study as well as information for consent.

I am looking forward to hearing from you!

Sincerely,

Tiffany L. Hood, PhD(c), MSN, RN, CNE  
PhD Candidate, PhD in Nursing Education Program  
University of Northern Colorado  
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**APPENDIX C**

**CONSENT FORM**



Project Title: Support of Student Nurses Who Witness Critical Events in the Clinical Setting: A Grounded Theory Qualitative Study

Researcher: Tiffany L. Hood, PhD(c), MSN, RN, CNE  
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University of Northern Colorado  
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Research Advisor: Dr. Darcy Copeland, PhD, RN  
Associate Professor, School of Nursing  
University of Northern Colorado  
Phone: 970-351-1930 Email: darcy.copeland@unco.edu

Purpose and Description: The primary purpose of this study is to better understand how students are prepared for critical events, how students are supported before, during, and after critical events, how students cope with psychological trauma, and the process of psychological recovery. Participants will be involved in:

- An approximately 60-minute telephone, computer conference, or in-person interview
- The interview will be audiotaped, and notes will be taken to gather data
- Review of clinical journals or other reflective assignments, if applicable

Questions will involve six topics. I will ask questions regarding student nurses' experiences with critical events in clinical setting. I will gather data on what types of clinical settings these events occurred in, and ask about events leading up the event, and details about the event; a) regarding how students were prepared for such events; b) how students were supported through the events; c) how students were supported after the events; c) how faculty members and/or staff nurses helped students process the event and how faculty members helped support the student mentally and emotionally; d) how effective the support was to the student; e) what the student wished faculty or staff would have done differently to better support the student; and f) how the event shaped the students' future clinical experiences and future career goals.

You must be at least 18 years old to participate in this research.

Audiotaped data will be kept on a password-protected computer, and paper data will be kept in a locked file cabinet for no more than seven years. All participants' demographic data will be kept confidential.

Please initial below to indicate that you have read and understood this explanation:

\_\_\_\_\_  
Initials

I foresee no risks to subjects beyond those that are normally encountered during interviews. I will use an electronic recording device to capture conversations. Although all information will be kept in secured, password-protected computer located at my home, there is a possibility that information can be stolen electronically, or that the computer itself can become stolen. Finally, any paperwork (such as this consent form, and any interview notes), which is associated with this research, will be stored in a locked file cabinet at my home. For your participation, a copy of the final research report will be given to you at your request.

Agreeing or refusing to be in this study will not impact our professional or personal relationship in any way. During the research process, you will be able to decide if you wish to continue in this research, and you have the right to end this research without any consequences. Although this study is designed to understand the lived experiences of faculty in supporting nursing students through mentally and emotionally difficult events they may encounter in the clinical setting, the researcher, Department of Nursing, and the University of Northern Colorado do not guarantee any results as a consequence of your participation.

Please feel free to email me at [hood0578@bears.unco.edu](mailto:hood0578@bears.unco.edu) or phone me at (801) 510-6550 if you have any questions or concerns about this research and please retain one copy of this letter for your records.

Thank you for assisting me with my research.

Sincerely,

Tiffany L. Hood, PhD(c), MSN, RN, CNE

\_\_\_\_\_  
(continue to next page)

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Research and Sponsored Programs, 0025 Kepner Hall, University of Northern Colorado, Greeley, CO 80639; 970-351-1907; research @uno.edu.

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date

I give permission for Tiffany L. Hood to use my situation with a fictitious name and remove all other identifiers as an example in her research reports.

Please initial here:

\_\_\_\_\_  
Initials

**APPENDIX D**

**REMINDER SCRIPT**



(Email)

Hello, (participant's first name). How are you? This is an email to remind you that you are scheduled to participate in an interview on (time and day) (telephone or face-to-face location).

Will you be still be able to participate?

Thank you, and I am looking forward to hearing from you,

Sincerely,

Tiffany L. Hood, PhD(c), MSN, RN, CNE

Email: hood0578@bears.unco.edu

cell) 801-510-6550

**APPENDIX E**

**LAST REMINDER TO ATTEND  
INTERVIEW SCRIPT**

(Email)

Dear (student name),

This is a reminder that you have volunteered to participate today in a research study on student experiences with witnessing critical events in the clinical setting and support through critical events. As part of this research, you have agreed to meet today at (time) at (location or by telephone); see the map below for the location. You do not need to bring anything but yourself; snacks and drinks will be provided to thank you for your willingness to come and participate.

By agreeing to participate in this study, you are helping to improve support for future nursing students in the clinical setting. Your voice is important.

Thank you for agreeing to be part of this project. We will see you (tonight), (time) at (location)!

Sincerely,

Tiffany L. Hood, PhD(c), MSN, RN, CNE  
Email: hood0578@bears.unco.edu  
cell) 801-510-6550

**APPENDIX F**

**INTERVIEW QUESTIONS**

Interview questions covered seven topics:

- a) how students were prepared for such events;
- b) how students were supported through the events;
- c) how students were supported after the events;
- d) how faculty members and/or staff nurses helped students process the event and how faculty members helped support the student mentally and emotionally;
- e) how effective the support was to the student;
- f) what the student wished faculty or staff would have done differently to better support the student; and
- g) how the event shaped the students' future clinical experiences and future career goals.

Research questions varied based on previous interviews and data needed to answer the research questions. Sample interview questions include:

**1. Introductory:**

- a. Tell me about a traumatic or critical event you experienced during a clinical rotation as a student
  - a. Where did the event occur?
  - b. How long ago did it happen?
  - c. What was the patient outcome?
  - d. Did you participate in care during the event? Or watch from a distance?
  - e. Had you even seen an event like this before?

**2. Student Experiences:**

- a. How did you feel when that happened?
- b. What did you do after the event happened?
  - a. Was that helpful to you? Why or why not?

**3. Support and Level of Effectiveness:**

- a. Did you receive any types of support from the staff nurses on the unit?
  - a. What types of support did you receive?
  - b. Was that helpful to you? Why or why not?
- b. Did you receive any types of support from your clinical instructor?
  - a. Did the clinical instructor provide support after that first day?
  - b. How long did they support you for?
  - c. Was that helpful to you? Why or why not?
- c. Have you received support from other nursing faculty? Like your in-class instructors?
  - a. How long did that last? (days, weeks, etc.)
  - b. What did they do to support you?
- d. What other support systems did you have?

- a. Did you talk about the event to other students, or your family or friends?
- b. Was that helpful to you? Why or why not?
- e. What do you feel was the best form of support?

**4. Preparation and Level of Effectiveness:**

- a. Do you feel you were prepared for what you witnessed?
- b. Did you receive any education or training to prepare you for such a situation?
  - a. What types of education or training did you receive?
    - i. In-class education
    - ii. Prior on-the-job training
    - iii. Pre-briefing from the staff nurses or clinical instructor
    - iv. Others?
  - b. Was it helpful? Why or why not?
- c. Looking back, what would you have wanted to happen?

**5. Recovery**

- a. How do you feel about the event today?
- b. How are you coping?
- c. Do you feel like the event has affected you long-term? In what ways?

**APPENDIX G**

**THANK YOU LETTER**

(Email)

Dear (student name),

Thank you so much for your time during our interview. I very much appreciate your input, and I enjoyed meeting with you. Your experiences and your opinions are very valuable in this research and have provided great information for helping to improve the support we provide to our students when they encounter emotionally difficult or psychologically traumatic events during their clinical rotations. My hope is to help determine the best methods for training faculty and staff nurses on bereavement and emotional support, so that they can best help students in their time of need. These types of events often shape their future careers, and I'd like them to be as positive as possible.

If you ever would like to add information or talk about your experience with me, please feel free to call or email at any time.

Thank you for agreeing to be part of this project.

Sincerely,

Tiffany L. Hood, PhD(c), MSN, RN, CNE  
Email: hood0578@bears.unco.edu  
cell) 801-510-6550



**APPENDIX H**

**STUDENT HEALTH SERVICE  
CENTERS**

*Student Health Service Centers*

University	Address, Phone Number, and Website	Hours and Services
<p><b>Brigham Young University</b></p> <p><b>Student Health Center</b></p>	<p>Address: 1750 N. Wymount Terrace Drive, Provo, UT, 84604</p> <p>Phone Number: 1-801-422-2771</p> <p>Website: <a href="http://health.byu.edu/index.html">http://health.byu.edu/index.html</a></p>	<p><b>General Hours:</b> Monday-Friday 8:00 am-5:30 pm</p> <p><b>Urgent Care:</b> Monday-Friday 8:00 am-5:30 pm Saturday 8:00 am-11:30 am</p> <p><b>Brigham Young University Student Health Center Services:</b></p> <ul style="list-style-type: none"> <li>• General Medicine</li> <li>• Maternity</li> <li>• Pediatric, well-child</li> <li>• Mental health/psychiatric</li> <li>• Chronic illness</li> <li>• Allergies</li> <li>• Pain</li> <li>• Urgent Care</li> <li>• Immunizations</li> <li>• Laboratory</li> <li>• Medical Records</li> <li>• Physical Therapy</li> <li>• Radiology</li> <li>• Specialty</li> </ul>

<p><b>University of Utah</b></p> <p><b>Student Health Center</b></p>	<p>Address: 1 Student Health Center, 555 Foothill Drive, Salt Lake City, UT, 84112</p> <p>Phone Number: 1-801-581-6431</p> <p>Website: <a href="https://studenthealth.utah.edu/">https://studenthealth.utah.edu/</a></p>	<p><b>General Hours:</b></p> <p>Monday</p> <ul style="list-style-type: none"> <li>• 7:30 am- 5:00 pm</li> </ul> <p>Tuesday</p> <ul style="list-style-type: none"> <li>• 7:30 am-7:30 pm Fall &amp; Spring semester</li> <li>• 7:30 am- 5:00 pm Summer semester</li> </ul> <p>Wednesday</p> <ul style="list-style-type: none"> <li>• 7:30 am-12:00 pm, 2:00 pm-5:00 pm</li> </ul> <p>Thursday</p> <ul style="list-style-type: none"> <li>• 7:30 am- 5:00 pm</li> </ul> <p>Friday</p> <ul style="list-style-type: none"> <li>• 7:30 am- 5:00 pm</li> </ul> <p>Saturday (Fall &amp; Spring Semesters only)</p> <ul style="list-style-type: none"> <li>• 9:00 am-12:00 pm</li> <li>• (Closed Saturdays during breaks and those falling before Monday holidays or after Friday holidays)</li> </ul> <p><b>University of Utah Student Health Center Services and Hours:</b></p> <ul style="list-style-type: none"> <li>• Full service primary health care</li> <li>• Preventive and Well Care</li> <li>• Women's Health/Family Planning</li> <li>• Pediatric Care Services</li> <li>• SHAC HIV/STD Testing &amp; Counseling Clinic</li> <li>• Immunizations - <b>Walk-in hours for immunizations ONLY 9am-4pm Monday-Friday.</b> Some immunizations require an appointment. Call for details. Note: Clinic is closed on Wednesdays, 12-2pm.</li> <li>• Travel Clinic - International travel vaccines available by appointment</li> <li>• Low Cost TB Tests, 9am-4pm Monday, Tuesday and Friday. Wednesdays 9am-11:45am. Note: Clinic is closed on Wednesdays, 12-2pm and no tests are placed on Thursdays. Those tested will be required to return in 48-72 hours after PPD placement.</li> <li>• Sports Medicine Clinic - Available Tuesday mornings 8:30 am-11:00 am by appointment.</li> </ul>
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<p><b>Utah Valley University</b></p> <p><b>Student Health Services</b></p>	<p>Address: 800 W. University Parkway, Orem, UT, 84058</p> <p>Phone Number: 1-801-863-8876</p> <p>Website: <a href="https://www.uvu.edu/studenthealth/">https://www.uvu.edu/studenthealth/</a></p>	<p><b>UVU Student Health Services General Office Hours:</b> Monday 8:00 am-7:00 pm Tuesday 8:00 am-6:00 pm Wednesday 8:00 am -7:00 pm Thursday 8:00 am-7:00 pm Friday 8:00 am-5:00 pm</p> <p><b>Medical Services Hours:</b> Monday, Wednesday &amp; Thursday 9-7, Tuesday &amp; Friday 9-4</p> <p><b>Psychiatric Services Hours:</b> Wednesday 9-6, Thursday 9-3</p> <p><b>Mental Health Services Hours:</b> Monday-Friday 8-5</p> <p><b>Learning Disability Assessment Services Hours:</b> Monday-Friday 8-5</p> <p><b>Crisis Services Hours:</b> Monday-Thursday 8-6, Friday 8-5</p> <p><b>After Hours crisis:</b> Call 1-800-273-TALK (8255)</p>
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<b>Weber State University</b>	3885 W. Campus Drive, Ogden, UT, 84408	<b>WSU Student Health Center Hours:</b> Monday-Thursday 8:00 am-4:00 pm Friday 8:00 am-3:00 pm
<b>Student Health Center</b>	1-801-626-6459  Website: <a href="https://weber.edu/healthcenter">https://weber.edu/healthcenter</a>	<b>List of Services:</b> <ul style="list-style-type: none"> <li>• Care for common illnesses and injuries</li> <li>• Lab Testing</li> <li>• Pharmacy</li> <li>• Physical exams and Pap Smears by appointment</li> <li>• Dermatological (Warts and Acne)</li> <li>• Reproductive healthcare, contraception and education</li> <li>• Healthy lifestyle information</li> <li>• Minor suturing</li> <li>• Ongoing care for chronic disease management</li> <li>• Referrals to preferred partners for outside medical care</li> <li>• Flu Shots, TDap and Vaccine referrals</li> <li>• TB Testing</li> <li>• Psychological medicine management</li> <li>• Consultation on disease prevention</li> </ul>

## **APPENDIX I**

### **INITIAL ANALYSIS CONCEPTS**

1. Alone/isolation
2. Anger/frustration
3. Balancing culture/values/responsibilities
4. Betrayal/misunderstood/wrongly judged
5. Blame of self/guilt/regret/remorse/second-guessing
6. Building trust
7. Comfort level
8. Concern, empathy, caring, connection
9. Fear (of participating, of doing things wrong)
10. Finding a role/sense of purpose/role conflict/responsibility/accountability/'I signed up for this'
11. Flashbacks/dreams/aftermath/difficulty sleeping/triggering events
12. Home support system (peers, family, friends)
13. Hospital debrief
14. Immediate debrief
15. Inability to share with family/friends
16. Influence of staff response/actions on student response/actions
17. Influence on career/future/learning experiences
18. Initial excitement that turned into reality
19. Lack of support system
20. Lack of understanding/lack of preparation
21. Life experience (prior job/training)
22. Mentorship

23. New/first time witnessing
24. No control/helplessness
25. Not knowing how to feel/process/react/cope
26. Personal and professional boundaries/distancing of self/relating on a personal level
27. Preparation (mental, self-assessment)
28. Preparation- Course content/school (death and dying, ELNEC, sim, CAPS, etc.)
29. Pressure and intimidation
30. Previous mental health/current mental health
31. Previous trauma/life event
32. Proactive prevention
33. Providing own coping mechanisms (writing, talking, hobbies, distraction, mindfulness, religion/spirituality, etc.)
34. Relationship of trust or lack of (with faculty, or staff)
35. Risk assessment (Importance of pre-clinical risk assessment/assessment of coping mechanisms/assessment of support systems)
36. Seeking professional help
37. Sense of accountability
38. Sense of purpose
39. "Shock"/surreal/disbelief
40. Staff building student's confidence/providing feedback/educating
41. Stress/intensity/overwhelm/no time to process
42. Support/Lack of support during or after the event (faculty, or staff)



43. Team relationship
44. Time slowed down
45. Uncomfortable
46. Unwillingness to ask for help/reach out/become emotional in front of others/  
‘pushing through’
47. Validation/reassurance/wanting to know they are ‘normal’/others unable to relate
48. Wanting resources before/after, wanting education on coping, stress, trauma
49. Wanting time to debrief but no debrief provided/available (clinical instructor,  
staff, hospital)
50. Work/life/school balance

**APPENDIX J**

**CONCEPTS ORGANIZED INTO  
PRIMARY AND SECONDARY  
CATEGORIES**

### **Primary Category 1: Relationship of Trust**

- Building a Trust Relationship
- Lack of Relationship of Trust
  - Betrayal/misunderstood/wrongly judged
- Mentorship
- Intimidation
- Comfort level

### **Primary Category 2: Preparation**

#### **Secondary Category 1: Nursing Education/Knowledge**

- Simulation and Course Content
- Mental Preparation/Self-Assessment
- Course content/school preparation (death and dying, ELNEC, sim, CAPS, etc.)
- Lack of understanding/lack of preparation
  - Wanting resources before/after
  - Wanting education on coping, stress, trauma

#### **Secondary Category 2: Life Experience/Beliefs and Values**

- Work Experience
- Upbringing
- Religion
- Culture

### **Primary Category 3: Finding a Role/Role Conflict**

- Sense of Purpose
  - Observer/Desire not to participate
  - Participant/Team member
    - Proactive Prevention
    - Sense of Accountability
  - Comforter
- Pressure/Intimidation
- Balancing culture/values/responsibilities

### **Primary Category 4: Clinical Instructor/Staff Active Presence**

- Instilling Confidence
- Education During the Event
- Feedback
- Lack of Staff Interaction
- Lack of Clinical Instructor Presence
- Student Presence (peer)

### **Secondary Category 3: Pre-Brief**

- Emotional Preparation
- Knowledge/Role Development

### **Primary Category 5: In-Event Stress Response**

- Initial “Shock”
  - Surreal, Disbelief
  - Initial excitement that turned into reality

- Feelings of Stress During the Event
  - Lack of Control/Helplessness
  - Unfamiliarity/”New” Experience
  - Anxiety
  - Fear (of participating, of doing things wrong)
  - “Shock”
  - Intense
  - Overwhelm
  - Anger/frustration
  - No Time to Process
  - Time slowed down
  - Feelings of Concern/Empathy/Caring/Connection
  - Handling Personal Emotions
  - Personal and professional boundaries/distancing of self/relating on a personal level

**Secondary Category 4: Clinical Instructor/Staff Emotional State/Actions**

- Influence of Staff Response on Student Response
- Importance of relationship with team

**Primary Category 6: Post-Event Stress Response**

- First Patient Death/First Experience
- “Shock”, Disbelief
- No Time to Process
- Uncomfortable

- Time slowed down
- Mental/Physical Exhaustion
- Blame of self/guilt/regret/remorse/second-guessing
- Anger/frustration

#### **Secondary Category 5: Isolation**

- Feeling Alone
- No Support System
- No One Else Understands/Others Cannot Relate
- Being Unwilling to Ask for Help
- Unwillingness to ask for help/reach out/become emotional in front of others/  
‘pushing through’

#### **Secondary Category 6: Validation**

- Reassurance
- Wanting to know they are ‘normal’
- Not knowing how to feel/process/react/cope

#### **Primary Category 7: Immediate Debrief**

- Immediate Debrief
- Tailoring to Their Needs
- Lack of Immediate Debrief
- Hospital Debrief
- Lack of Hospital Debrief
- Post-Conference
- Lack of Debrief with Nurse/Preceptor

### **Primary Category 8: The Aftermath**

- Flashbacks/Triggering Events
- Difficulty Sleeping
- Follow-Up
- Words of Comfort from Faculty
- Student Reaching out to Faculty
- “I’m Fine”/Pushing Through
- Lack of Follow Up

### **Primary Category 9: Coping/Resilience**

- Development of Coping Skills/Resilience
- Self-Care Spirituality
- Reflective Writing
- Mindfulness/Grounding Techniques
- Hobbies
- Time
- Additional Experiences/Distraction
- Seeking professional help

### **Secondary Category 7: Risk Assessment**

- Importance of Risk Assessment
- Past History of Trauma
- Assessment of coping mechanisms
- Assessment of support systems

### **Secondary Category 8: Home Support System**

- Talking
  - Support from Peers/Others Student Nurses
  - Support from Friends and Family
  - Inability to Talk to Friends and Family (HIPPA)

### **Secondary Category 9: Post-Event Growth**

- Learning Experiences
  - Cognitive/Psychomotor
  - Psychosocial/Affective
- Personal Life Impact
- Work/Life Balance
- Career Impact



**APPENDIX K**

**EXAMPLE OF STUDENT HOBBIES  
AS COPING MECHANISM  
(WOODWORKING)**

