SECONDARY TRAUMATIC STRESS IN EMERGENCY DEPARTMENT NURSES: A COMPARATIVE STUDY

by

Diana Flory

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

School of Behavioral Sciences

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APPROVED BY:

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ABSTRACT

This study seeks to determine if Emergency Department nurses experience more secondary traumatic stress than other nurses in different units of the hospital. This study is important because it is the first of its kind to compare Emergency Department to a medical intensive care unit, labor and delivery, and a medical floor in the same hospital. This was accomplished through the use of the Secondary Traumatic Stress Scale (STSS), with the addition of seven demographic questions used at the end. The STSS was administered to 110 nurses in a suburban, level-II trauma center in northeast Indiana during January and February of 2023. The data was assessed using ANOVA, and it was found that the medical intensive care unit had overall higher levels of secondary traumatic stress than the other three units measured. Limitations to the study include the relatively low response rate of the medical intensive care unit, which means the secondary traumatic stress rate may not be fully representative of that unit in general. A further limitation is the time of year during which the data was collected, which is traditionally a slower time for Emergency Departments in terms of how many traumas they encounter. Recommendations for future study include examining if the number of traumatic events experienced impacts secondary traumatic stress levels, as well as if a participant's support system is connected to their level of secondary traumatic stress.

Keywords: secondary traumatic stress, STS, Secondary Traumatic Stress Scale, nurses, emergency department, intensive care

Dedication

To my parents, Mike and Linda, and my siblings, Jennie and Adam, thank you for supporting me even when you did not understand what I was doing or why. That support means more than you know.

To my cheerleaders: Sarah, Marissa, and Tara. Thank you for cheering me on from where you are. Thank you for the prayers and words of encouragement. Thank you for not letting me quit when times got tough. And to Tara, thank you for going above and beyond. You have done more than I could have hoped, and I will never be able to thank you enough.

To my children, Emma and Sofia, thank you for being understanding and patient with me through all of the times that I needed to work instead of doing other things. Umba gumba.

To my husband, Michael. For all the long nights and early mornings, for all the read-throughs and suggestions, for sitting and holding my hand when I cried that it was all too hard, for being my main source of all things good. You've joked that you deserve an honorary certificate in trauma counseling for this, and I agree. None of this would have been possible without you. Seriously.

And to the nurses. Many thanks to those who took the time to participate in this research and share their experiences. More than that, though, to all the nurses everywhere who put themselves through emotionally difficult situations in order to help people heal. Thank you for what you do.

This research and dissertation are dedicated to you all.

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List of Abbreviations

Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-5)

Intensive care unit (ICU)

Institutional Review Board (IRB)

Medical intensive care unit (MICU)

Post-traumatic stress disorder (PTSD)

Secondary traumatic stress (STS)

Secondary Traumatic Stress Scale (STSS)

CHAPTER ONE: INTRODUCTION

Overview

Secondary traumatic stress (STS) is a mental health disorder that affects people in helping professions who work with victims of trauma. Among those professions that are prone to STS are crisis workers, police, firefighters, first responders, medical technicians, and therapists (Jankowski, 2012). Nurses fit into the medical technician category and may care for survivors of trauma in their daily work. Types of nurses that may encounter others' trauma include emergency department, intensive or critical care, and pediatric nurses. While many studies have examined the prevalence of STS in each of these types of nurses, few studies have compared rates of STS among nurses within the same hospital to determine which unit has the highest instance of STS. This study seeks to compare rates of STS in one regional trauma hospital to determine which unit has the highest instance of STS. Further, this study will examine what social supports the nurses utilize and how those social supports may impact the development of STS.

Background

Rates of STS in nurses vary by study and location. Morrison and Joy (2016) reported as many as 75% of emergency nurses surveyed experienced at least one STS symptom in the previous week (Morrison & Joy, 2016). Similarly, Duffy et al. (2015) found that 64% of emergency department nurses surveyed met full criteria for STS. A third study by Ratrout and Hamdan-Mansour (2019) found that 94% of emergency department respondents met at least minimum criteria for STS. While these numbers show that there is variance among STS rates, they also indicate that STS is a problem that needs to be addressed, especially in emergency department nurses.

STS has the same symptoms as posttraumatic stress disorder (PTSD) but occurs from experiencing the traumatic event vicariously through contact with the person who directly experienced the trauma (Beck & Gable, 2012). It includes symptoms of intrusion, avoidance, and arousal (American Psychiatric Association, 2013). STS has been reported in nurses from oncology, emergency, heart and vascular, hospice, pediatric, and labor and delivery nurses (Beck & Gable, 2012). Rarely (Al-Majid et al., 2018; Hinderer et al., 2014; Meadors et al., 2010; Mealer et al., 2009; Sacco et al, 2015), however, have studies undertaken to compare rates among nurses from different nursing units within a hospital.

Historical Overview

The concept of STS was first proposed by Figley (1995a), who conceptualized it as the natural behavioral and emotional effects of working with a person who has experienced a traumatic event. Figley further stated that STS can be thought of as a type of stress that arises from helping or wanting to help someone who is suffering or traumatized (1995a). Figley stated that there is a "cost of caring" (1995a, p. 10), or a pain that individuals experience who are exposed to others' trauma (Jankowski, 2012). These definitions and descriptions of STS help to show what nurses may experience when working with patients who have suffered a trauma. In helping someone who has been traumatized, the nurses open themselves up to experience their patient's pain.

STS is often used interchangeably with compassion fatigue. Compassion fatigue began to appear in research and literature early in the 1990s and was first used to describe nursing populations who experienced hospital emergencies on a regular basis (Melvin, 2015). Nurses are often in a position in which they may "absorb and internalize the emotions of patients and, at times, coworkers" (Melvin, 2015, p. 68). Figley also used the term compassion fatigue as a

substitute term for STS, denoting that it was a more user-friendly term while emphasizing the role of compassion in those who develop it and downplaying the role of stress (1995a). Figley's emphasis on the role of compassion mirrors Melvin's idea that a nurse may internalize a patient's emotions, showing that compassion can, in some ways, be detrimental to a nurse's mindset.

While the term was originally used to describe mental health therapists and social workers who treated traumatized clients, STS was expanded to include many other personnel who may respond to an emergency. Due to the large number of studies devoted to STS in recent years, crisis workers, police, firefighters, rescue workers, and emergency medical technicians were added to the ranks of those who can develop STS (Jankowski, 2012). Not all who can develop STS have the same experiences with it, however. It has been suggested that there is a difference between the experience that an emergency response personnel may encounter during a one-time disaster as compared to the long-term experience of a psychotherapist of hears about sexual abuse for several years with a client (Baird & Kracen, 2006). In this way, length of exposure to a traumatic event may mitigate the severity of STS that the helping professional develops.

Not everyone who develops STS is a professional. Family and friends of traumatized individuals can be vulnerable to STS (Figley, 1995a). This is because family and friends may be privy to the victim's detailed account of the traumatic experience, and it can be difficult to experience second-hand. It has even been suggested that STS symptoms are contagious, and that they can be passed on to other people (Jankowski, 2012). This would imply that co-workers of people with STS are at risk for developing symptoms, as well as family members who visit at the hospital.

STS may look similar to PTSD, but the difference is that the person with STS witnessed the effects or aftermath of trauma on another person. A person with STS may experience any of three domains associated with STS. They may re-experience content from a victim's story, they may avoid or numb themselves regarding potential triggers, and they may experience burnout (Sansbury et al., 2015). These can further be broken down into physical symptoms such as sleep disturbances; develop emotional changes like irritation, anxiety, and guilt; or find themselves over-eating or abusing substances (American Psychiatric Association, 2013). They may also find that they have trouble performing tasks that were once normal for them, as well as withdrawing physically or psychologically from relationships (Sansbury et al., 2015). In these ways, STS can affect may facets of a person's daily life.

Theoretical Framework

Several theories exist that may explain the development of STS, particularly in nurses. First is the Trauma Transmission Model, stating that empathy is the main component when developing compassion stress (Ratrout & Hamdan-Mansour, 2017). Sharing empathy with trauma victims may lead to compassion stress, which can result in STS (Figley, 1995b). This model says that we have to identify with the victim and her or his suffering in order to identify with the victim as a person, and that this sometimes leads to experiencing similar emotions to what the victim experienced (Figley, 1995b). This causes the trauma to transfer from the victim to the helper.

The Ecological Framework of Trauma is a second theory that may explain the development of STS. This theory states that STS develops in a linear model wherein STS levels are moderated by personal and environmental variables that alter the severity of STS symptoms (Ratrout & Hamdan-Mansour, 2017). This model works on the assumption that people and

social settings depend on and influence one another (Yassen, 1995). For example, a nurse who was once involved in a traumatic car accident may overidentify with a patient who is hospitalized for a similar reason. The nurses' overidentification with the patient could lead to higher levels of STS than a different nurse without that history may experience.

The third theory is that nurses are wounded healers, practicing medicine while working through their own personal or professional traumas (Ratrout & Hamdan-Mansour, 2017). Carl Jung stated that only a wounded physician can heal others (Gilbert & Stickley, 2012), which contributed to this theory. In the wounded healer theory, nurses either succumb to their own traumas when faced with others' trauma, or they rise above their trauma to extend healing in others' trauma (Ratrout & Hamdan-Mansour, 2017). This idea of a wounded healer is similar in some ways to the ecological framework from above in its idea that a nurse's past experiences enable or inhibit his or her ability to treat others. The wounded healer theory seems to carry with it a hypothesis that either a nurse will treat others more adeptly because of his or her own experiences, or the nurse will succumb to his or her own trauma and fail to give the best treatment to others.

Problem Statement

Several studies (Adriaenssens et al., 2012; Allen & Palk, 2018; Barr, 2017; Duffy et al., 2014; Hinderer et al., 2014; Mason et al., 2014; Quinal et al., 2009; Ratrout & Hamdan-Mansour, 2019; Roden-Foreman et al., 2017; Todaro-Franceschi, 2013; Wolf et al., 2020; Young et al., 2011) have examined STS in nurses in various hospital departments. While these studies add to the body of knowledge about STS, they generally only look at one group of nurses. These studies can be useful to the hospitals in which they are conducted, but they are not comprehensive. In looking at STS in only one department, studies fail to capture the reality of

trauma exposure throughout the hospital. It may be more practical for studies to compare STS in different units in order to determine which nursing populations need more support from the administration.

While it is evident that emergency department nurses are exposed to multiple traumatic events during their work (Adriaenssens et al., 2012), nurses from other departments may also be exposed to traumatic events as well. Mealer et al. (2009) noted that intensive care unit (ICU) nurses are also exposed to traumatic events throughout the course of their work with patients, as are labor and delivery nurses (Beck & Gable, 2012). They may be exposed to different types of traumatic events, but any exposure to others' trauma can lead to STS in nursing populations. This is true for nurses in several different hospital units.

Regardless of the department where the trauma exposure occurs, nurses who experience STS are at an increased risk for job burnout (Allen & Palk, 2018; Ratrout & Hamdan-Mansour, 2017; Sacco et al., 2015). Job burnout in nurses can lead to staff turnover (Allen & Palk, 2018; Ratrout & Hamdan-Mansour, 2017; Bakhamis et al., 2019), which can be costly for hospitals. For this reason, hospitals need to know who in their employ may be experiencing STS. While one response may be to increase support for all nurses, it is possible that targeted measures are appropriate for the nursing units that most need it. The problem is that most current studies only take into account one nursing unit at a time, which may miss what is transpiring throughout the hospital as a whole.

Purpose Statement

The purpose of this study was to compare the rates of STS among vulnerable groups of nurses at a large suburban hospital. This was one of the first studies that compare emergency department, ICU, labor and delivery, and general nurses to compare levels of STS among groups.

A small number of studies (Al-Majid et al., 2018; Hinderer et al., 2014; Meadors et al., 2010; Mealer et al., 2009; Sacco et al., 2015) have made comparisons among nursing units, but not the ones proposed in this study. Nurses in the aforementioned units were administered the Secondary Traumatic Stress Scale in order to assess levels of STS, as well as six demographic questions. The aim of the Secondary Traumatic Stress Scale and the demographic questions was to determine if emergency department nurses experience more STS than other departments. The dependent variable is the STSS score, and the independent variable is the department in which the nurses work.

Significance of the Study

The significance of this study is that it was the first to examine STS across four non-related hospital units. It adds to the existing body of knowledge about STS in nurses in two ways. First, it informs hospitals about the possibility of some specific units experiencing more STS than other units. It has already been established that nurses in emergency, ICU, and labor and delivery experience STS (Adriaenssens et al., 2012; Mealer et al., 2009; Beck & Gable, 2012), but this study helps other hospitals become aware of the possibility of which unit may experience more STS than the others.

Second, this study aimed to help hospitals identify what kinds of social supports are important to their nurses' health. Social supports may come in the form of family, friends, peers, work supervisors, and professional counseling (Adriaenssens et al., 2012; Allen & Palk, 2018; Duffy et al., 2014). If hospitals know what kind of social supports their nurses find most useful, they may be able to determine how to help their staff best use those social supports in order to combat STS. This study, by asking the participants about social supports, should add to that knowledge base.

Research Question

The study addressed the following research question:

RQ: Do emergency nurses experience higher levels of secondary traumatic stress than nurses in other units of the hospital?

Definitions

1. *Trauma* – a stress response to an event outside of a person's normal life experience that includes a failure of self-regulating functions (Krupnik, 2019)
2. *Secondary traumatic stress* – the behavioral and emotional effects of working with a person who has experienced a traumatic event (Figley, 1995a)
3. *Posttraumatic stress disorder* – the development of characteristic symptoms after exposure to a traumatic event that involved personal experience of actual or threatened serious injury or death, witnessing another's experience, or learning about the experience of a family member or close associate (American Psychiatric Association, 2013)
4. *Compassion fatigue* – psychic exhaustion in which energy extended surpasses a capability to recover from the effort (Boyle, 2011)
5. *Vicarious traumatization* – a transformation that takes place within the persona that results from empathetic engagement with another person's trauma (Jankowski, 2012)
6. *Burnout* – lack of ability to cope with workplace emotional stress (Embriaco et al., 2007)

Summary

Secondary traumatic stress affects nurses in many departments of hospitals. While several studies have examined STS in singular departments, few studies have compared rates of STS among different departments concurrently. This study sought to compare the rates of STS

between emergency, ICU, labor and delivery, and a general medical unit of one hospital to determine which unit has the highest level of STS.

CHAPTER TWO: LITERATURE REVIEW

Overview

Nurses in any unit of a hospital may have first- or second-hand experiences with trauma that can lead to STS. Among the units that may be particularly susceptible to developing STS are emergency, ICU, and labor and delivery (Adriaenssens et al., 2012; Mealer et al., 2009; Beck & Gable, 2012). The primary hypothesis of this study is that emergency department nurses experience more STS than do nurses in other units of the hospital. The null hypothesis is that there is not a statistically significant difference between the amount of STS experienced by emergency nurses as compared to nurses in other units of the hospital.

The theoretical implications of this study are to help advance the understanding of STS in hospital nurses. Many studies have been undertaken, but it is still not generally understood if some nursing units have higher levels of STS than others. While emergency department and intensive care/critical care departments have been studied, they are rarely compared in terms of STS prevalence. It would be helpful for the profession to have a clearer understanding of the situation in order to better help those who endure STS.

The practical implications of this study are to help nurses who experience STS in the workplace. Secondary traumatic stress can lead to compassion fatigue and job burnout (Bakhamis et al, 2019; Mottaghi et al., 2020). These can lead to a lack of wellbeing among nursing staff, poor job performance, and even nurses leaving the profession. Hospitals need to be aware of how their nurses are handling stress in order to help the nurses cope more effectively and increase job performance.

The purpose of this chapter is to provide a conceptual and theoretical framework for STS, examine the related literature, and summarize the links between the existing literature and what this study seeks to accomplish.

Conceptual Framework

Before we can examine the levels of STS in nurses, we must first establish what STS is, how it compares to other disorders, and the theoretical frameworks that explain it.

Defining Secondary Traumatic Stress

Secondary traumatic stress can be conceptualized as the natural behavioral and emotional effects of working with a person who has experienced a traumatic event (Figley, 1995a). People who have experienced trauma are prone to trauma symptoms and even posttraumatic stress disorder (PTSD). With STS, however, the person who develops it has not experienced the direct trauma personally. They are merely witnessing the effects or aftermath of the trauma on another person.

STS can also be thought of as stress that comes from helping or wanting to help someone who is suffering or traumatized (Figley, 1995a). Merely witnessing someone go through a traumatic event is not enough to prompt STS. It is the presence and transference of empathy that seems to activate STS. This happens when someone steps into the situation and tries to help the person who is suffering.

Many professions are at an increased risk for developing STS. These include people who work with a traumatized person at different points throughout the traumatic situation, beginning with crisis workers and first responders, medical workers who may treat the person in a hospital setting, and therapists who may step into the situation later (Jankowski, 2012). Each of these professionals works with a trauma victim for differing amounts of time, but each is at risk of

developing STS due to their empathetic engagement with the victim. At further risk for developing STS are family and friends of people who have experienced trauma, as they are also empathetically engaged with the victim (Jankowski, 2012).

Related Disorders

STS is similar to PTSD in many ways. The onset of STS may be rapid and may present symptoms similar those of PTSD (Bledsoe, 2012). According to the *Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition* (DSM-5; American Psychiatric Association, 2013), PTSD must meet certain criteria in order to be diagnosable. In addition to experiencing a traumatic event, the person must meet set criteria including intrusion symptoms, avoidance symptoms, negative cognitions, and arousal symptoms (American Psychiatric Association, 2013). People who develop STS experience the same core cluster symptoms as victims of trauma who develop PTSD, but without experiencing the actual trauma event (Jankowski, 2012). Therein lies the difference between PTSD and STS: someone with PTSD experienced the initial traumatic event, while someone with STS witnessed the effects or aftermath of another's trauma. In other words, PTSD is a direct effect of trauma, and STS is an indirect effect.

The terms compassion fatigue and STS are sometimes used interchangeably, but there have been efforts to differentiate between the two. As Boyle (2011) notes, compassion fatigue is most simply described as psychic exhaustion. In healthcare workers, it is a state in which the compassionate energy nurses extend surpasses their capability to recover from the effort (Boyle, 2011). In nurses in particular, compassion fatigue is marked by an inability to nurture patients adequately (Hinderer et al., 2014). Figley (1995a) offered compassion fatigue as a more user-friendly term for STS, citing the role of compassion among those who develop it and downplaying the role of stress.

There is a difference between compassion fatigue and STS. It has been suggested by some authors that compassion fatigue is marked by a cumulative or chronic exposure to suffering, as opposed to the possibility of developing STS from a singular event (Epstein et al., 2020). Newell and MacNeil (2010) echo the idea that compassion fatigue is due in part to a chronic expenditure of empathy. It may be the case that compassion fatigue is the result of burnout, prolonged emotional and interpersonal stressors, and STS combined (Kelly & Lefton, 2017). Further, compassion fatigue may result in a caregiver having a lessened capacity or interest in demonstrating empathy for a suffering individual (Meadors et al., 2010).

Vicarious trauma is another term that is sometimes used interchangeably with STS. Jankowski (2012) explained vicarious traumatization as a transformation that takes place within a provider's persona and is the result of empathetic engagement with someone else's trauma. Bledsoe (2012) agrees that vicarious traumatization comes from the cumulative effect of working with other's trauma. It can impact a provider's sense of esteem, intimacy, safety, and trust (Bledsoe, 2012), as well as their beliefs about themselves, their relationships, and the world in general (Rauvola et al., 2019).

There is a difference between STS and vicarious trauma. While STS refers to secondary exposure to trauma, vicarious traumatization is the response that occurs. Some theorize this response to be a permanent and irreversible one that leaves the healthcare professional permanently changed (Kadambi & Ennis, 2004). The changes to a person with vicarious trauma can be physical, neurological, emotional, mental, cognitive, spiritual, and even sexual (Branson, 2019). While STS can be treated in much the same way that PTSD would be, vicarious trauma is thought to be incurable (Kadambi & Ennis, 2004). The healthcare professional's inner experience is thought to be permanently and profoundly changed when they bond empathetically

with someone's traumatic experience (Kadambi & Ennis, 2004). For this reason, vicarious traumatization may happen more with therapists and social workers than with other healthcare providers.

Similar to compassion fatigue and vicarious trauma, burnout is a response to difficult situations. It has been described as the lack of ability to cope with workplace emotional stress (Embriaco et al., 2007). Like compassion fatigue, it involves an over expenditure of energy and resources, with the result that the provider experiences feelings of failure and exhaustion (Embriaco et al., 2007). Burnout may lead to providers feeling depression, anger, hopelessness, exhaustion, and frustration, as well as feeling that their work does not make a difference (Flarity et al., 2013). Another author offered exhaustion, overwhelm, self-doubt, feeling bitter, cynical, and ineffectiveness as responses to burnout (Henry, 2014). This can negatively affect their personal and professional lives, as well as the lives of those they care for. While burnout was originally thought to be a response to working with emotionally needy clients or patients, it has since been reconceptualized as a response to institutional or organizational factors (Galek et al., 2011). It has been suggested that burnout is contagious among nurses (Hinderer et al., 2014), and that it is related to work environment, workload, patient prognosis, and individual coping mechanisms.

Burnout differs from STS in that it is not directly attributed to working with a traumatized patient. Rather burnout happens due to a mismatch between the person and their workload, feelings of control, reward, community, fairness, or values (Dall'Ora et al., 2020). Having traumatized clients among their workload may contribute to mounting burnout in nurses, but it is not the direct cause of it.

Theoretical Frameworks

There are several theories as to why nurses may be prone to developing STS. One such theory is the Trauma Transmission Model, which states that empathy is the main component in the development of compassion stress (Ratrout & Hamdan-Mansour, 2017). This theory posits that compassion stress is a result of sharing empathy with victims of trauma, and that compassion stress in prolonged situations results in STS (Figley, 1995b). The trauma transmission model says that in order to understand the trauma victim, we must identify with the victim and her or his suffering (Figley, 1995b). Through trying to understand the victim, the helper may actually experience emotions that are similar to what the victim experienced, resulting in trauma symptoms similar to the victim's (Figley, 1995b). This shared empathy causes a transference of trauma between the victim and the helper.

A second theory is the Ecological Framework of Trauma model, which outlines the process through which trauma workers develop STS (Ratrout and Hamdan-Mansour, 2017). In this theory, STS develops in a linear process, with levels of STS being moderated by both personal and environmental variables that raise or lower the instances of STS symptoms (Ratrout & Hamdan-Mansour, 2017). This model assumes that people and social settings are interdependent and influence one another (Yassen, 1995). It says that the physical, psychological, and social environments can affect a person's behavior, each person adapts to environmental conditions that facilitate development and growth, and that the health of a community is mediated by the flow of energy and the cycling of resources (Yassen, 1995). Seen through this model, a nurse's behavior is affected by the environment, the nurse then grows and develops, and that development impacts the community (patients and families, other nurses, the hospital, etc.).

A third theory is that of the nurse as a wounded healer, in which nurses are walking wounded with their own personal or professional trauma (Ratrout & Hamdan-Mansour, 2017). The idea of wounded healers has deep roots in literature. It may have originated in Asclepius, a Greek mythological character who created a sanctuary for treating others borne out of his own wounds (Gilbert & Stickley, 2012). More recently, psychologist Carl Jung made the assertion that only a wounded physician can heal others (Gilbert & Stickley, 2012). This theory of nurses as wounded healers sees nurses as either succumbing to their own trauma when faced with that of others, or rising above the trauma to become a wounded healer in the face of others' trauma (Ratrout & Hamdan-Mansour, 2017).

While the first and third theories may explain STS in nurses in general, the second theory aligns most specifically with my research question. My research question asks if emergency department nurses experience more STS than nurses in other units. I believe that the linear process of the Ecological Framework of Trauma model and the personal and environmental variables it proposes best resonates with this question. The proposal that nurses are impacted by, and in turn impact, their environment may play a role in who develops STS and who does not.

Related Literature

Most of the literature regarding STS in nurses focuses on emergency and intensive care/critical care unit nurses. The information can then be broken down into five themes or categories that are usually addressed: types of traumatic events witnessed, nurses' responses to trauma, contributing factors to the trauma experienced, social supports received, and results on the workplace. Each of these is a valid theme that deserves time and attention. Additionally, the development of social supports and their benefits needs to be addressed.

Secondary Trauma in Emergency Nurses

Emergency department nurses are exposed to scenarios that are often unseen by the rest of the hospital. Often the first line of care, emergency department nurses perform the first formal care for a person who has encountered a traumatic situation. Emergency department nurses see and address the trauma patients' wounds before anyone else in the hospital, making them front-line workers. What they encounter in the emergency department may be more severe or critical than what other nurses encounter when the patients are transferred to other units.

Traumatic Events in the Emergency Department

The most commonly reported traumatic events are death in general, the sudden death of a young person, resuscitation and/or death of a baby or small child, and dealing with victims (alive or dead) of automobile or train accidents (Adriaenssens et al., 2012; Allen & Palk, 2018). Other traumatic events encountered include burn victims, suicides (attempted or completed), aggressive or violent patients, and emotional families of the patients (Adriaenssens et al., 2012). When asked how often nurses were exposed to traumatic events, 32% reported two or three traumatic events, 23% reported four or five traumatic events, 17% reported more than six traumatic events, and 15% reported one traumatic event over a six-month period (Adriaenssens et al., 2012). These numbers demonstrate that witnessing trauma is a common event for many emergency department nurses.

Emergency Nursing Responses to Trauma

Nurses in emergency departments demonstrate many responses to trauma. In one survey, they exceeded cut-off scores for anxiety (32.4%), depression (28.7%), somatic complaints (37.2%), and PTSD (25%; Adriaenssens et al., 2012). In a similar survey, emergency providers were administered the Secondary Traumatic Stress Scale (STSS) and nearly 40% reported at

least one symptom cluster for PTSD, with 13% reporting clinical levels of PTSD (Roden-Foreman et al., 2017). In this second survey, the providers had lower levels of STS than the authors predicted. This led them to hypothesize that trauma providers might have fewer interactions with trauma patients than other health care providers do throughout the duration of the patients' stay in the hospital (Roden-Foreman et al., 2017). A further survey found that just 7% of all medical professionals (including nurses) who work with traumatized patients develop STS (Sabo, 2006). This shows that numbers for STS among emergency department workers range greatly.

These levels of negative emotional responses and PTSD can be found internationally as well. In a survey of emergency nurses in Ireland, 64% met criteria for PTSD by meeting all three diagnostic categories (Duffy et al., 2014). Based on these criteria, it was determined that these nurses likely have STS. Interestingly, the other 35% of nurses surveyed failed to meet any diagnostic criteria for STS (Duffy et al., 2014). Further, emergency nurses in Jordan were surveyed for STS. According to the questionnaires administered, 94% scored at least 28 on the STSS, indicating that they experience STS to some degree, whether it was low, average, or high (Ratrout & Hamdan-Mansour, 2019). While the numbers from this second survey are much higher than the results of other surveys, they indicate that STS is a common reaction to trauma in emergency nurses regardless of culture.

Emergency nurses have described various emotional responses to working with trauma patients. These include feelings such as anger and sadness, and physical reactions such as tearfulness, shaking, trembling, and racing hearts (Allen & Palk, 2018). Many of these responses fall into PTSD cluster symptoms. The most commonly reported PTSD cluster symptoms include arousal, avoidance, and intrusion symptoms (Ratrout & Hamdan-Mansour, 2019). Some of the

PTSD symptoms emergency nurses experience include intrusive thoughts about patients, feeling discouraged about the future, and irritability (Duffy et al., 2014). This demonstrates symptoms of avoidance and intrusion.

Contributing Factors to Emergency Responses to Trauma

There are several factors that contribute to STS in emergency nurses. One of the most prevalent factors is empathy. Additional factors include nursing workload, the values of the organization they work for, and the general environment in which they work (Rauvola et al., 2019). Each of these on their own can contribute to STS in small ways, but the combination of them all may become overwhelming for nurses. This is especially true when nurses are repeatedly exposed to trauma. Other factors that are considered risk factors for STS include the support which nurses are shown by their organization and their years of professional experience (Sprang et al., 2019).

Additionally, nurses may be at increased risk for STS because of the level of empathy they demonstrate with patients and their families (Arnold, 2019). Due to the nature of the trauma which their patients are exposed to, nurses in turn are exposed to emotionally challenging situations within the caring relationship. These situations include interacting with the patients themselves, as well as with the families of patients (Arnold, 2019). What may help buffer the development of STS is that emergency nurses typically do not care for patients for an extended period of time, so they do not have the opportunity to develop long-term empathetic relationships with the patients (Roden-Foreman et al., 2017).

A further contributing factor to how nurses respond to trauma is based on their own traumatic experiences. Nurses may have their own personal experiences with trauma (Arnold, 2019), including interpersonal violence, car accidents, and sexual assault. It has been theorized

that caring for victims of trauma may exacerbate or bring out nurses' own trauma experiences (Ratrout & Hamdan-Mansour, 2017). This may make it difficult for nurses to function appropriately when faced with trauma situations similar to their own. A personal history of trauma may actually be a predicting variable of STS (Sabin-Farrell & Turpin, 2003).

The Role of Social Supports in Emergency Nursing

There are protective qualities that seem to be related to the development of STS in nurses. These include such factors as personal resiliency, endurance, mindfulness, self-awareness, and social support (Sabo, 2006; Sprang et al., 2019). Of these, social support is perhaps the most important. Social support comes in different forms, including family, friends, peers, work supervisors, and even professional counseling (Adriaenssens et al., 2012; Allen & Palk, 2018; Duffy et al., 2014).

In several different surveys, nurses were asked to identify what types of social support they found most important. Nurses in one survey indicated that one of the most important forms of social support was that of work supervisors, followed by support from colleagues (Adriaenssens et al., 2012). In another survey, when asked how they sought support, nurses stated they debrief with coworkers, talk with their significant others or partners, and even seek professional counseling (Allen & Palk, 2018). Further, many nurses in a third survey stated that having a mentor or best friend in the workplace was helpful in working through stress (Duffy et al., 2014). These findings all demonstrate that nurses tend to find solace in their coworkers. Whether they are peer or supervisors, there is something comforting to nurses in the relationships with the people with whom they work. There they find opportunities for support, debriefing, and mentoring. All of these help nurses fend off high levels of STS in the workplace.

Results on the Workplace of STS in Emergency Nurses

Emergency nurses who have psychological and physical impairments due to STS can have varied effects on the workplace. Most of these effects are negative and need to be taken seriously by hospitals. First, STS can lead to an increase in nursing absenteeism and sick leave (Adriaenssens et al., 2012; Ratrout & Hamdan-Mansour, 2019). Nurses who are emotionally and physically stressed by what they do are prone to take sick days, even when they are not ill. This is an avoidance symptom and can place strain on the nursing pool.

Second, STS can result in nurses having decreased job performance (Adriaenssens et al., 2012; Ratrout & Hamdan-Mansour, 2017). Nurses who are preoccupied with how they feel emotionally or physically may not be at peak performance. This can lead both to errors and to a decrease in the quality of care that they give (Adriaenssens et al., 2012; Ratrout & Hamdan-Mansour, 2017). Nurses may deliver poor quality of care accidentally or purposefully. If purposefully, it may be because the nurses are trying to emotionally distance themselves from the traumatic situations their patients are dealing with in hopes of not being affected by them. This emotional or empathetic distancing can be felt by the patient and may result in the patient having an unsatisfactory experience.

Third, STS can result in job burnout for emergency nurses (Allen & Palk, 2018). Burnout is different from STS. Burnout can be seen in emotional exhaustion, patient depersonalization, poor attitude toward patients, and lack of feeling personal or work accomplishments (Hinderer et al., 2014). Nurses who suffer from burnout in addition to STS may have a poor overall job performance in addition to poor physical and mental health. Nursing burnout can lead to staff turnover (Allen & Palk, 2018; Ratrout & Hamdan-Mansour, 2017). Staffing turnover is a costly outcome for the organization for whom the nurses work.

Hospitals and organizations need to be aware of certain significant variables for nurses who suffer from STS. First is that many nurses with STS consider not only job change but also career change for the reasons listed above (Duffy et al., 2014). Nurses who are stressed about their jobs may have a tendency to avoid working when possible. Second, nurses dealing with STS may want to seek help but may fear that they would face recrimination if they did so (Browning et al., 2007). When nurses ask for counseling recommendations or for employee assistance programs, organizations need to take note. This is often a sign that nurses are struggling. Finally, nurses may find alcohol outside of work useful in alleviating workplace stress (Duffy et al., 2014). Organizations need to be aware that this is a warning sign of significant problems in the nurse's life, and investigate how to help the nurse alleviate stress in a more productive way.

Secondary Trauma in Intensive Care/Critical Care Nurses

Similar to emergency nurses, intensive care unit (ICU) or critical care nurses are often studied for levels of STS. While ICU nurses may care for the same trauma patients as emergency nurses, they often care for them after the patients have been stabilized in the emergency department. In this way, ICU nurses are exposed to patients' trauma differently than the nurses in the emergency department. Unlike emergency nurses, though, who generally care for patients for a relatively short duration, ICU nurses may care for trauma patients for days or weeks at a time. The duration of care may be one way in which emergency and ICU nurses develop STS differently.

Traumatic Events in the ICU

Whether caring for the patients earlier or later in the process of medical care, ICU nurses are still exposed to patients' trauma. ICU nurses who met diagnostic criteria for PTSD reported

a variety of traumatic events they had witnessed. Among them were caring for trauma-related injuries; witnessing massive bleeding or open surgical wounds; and seeing a patient die or performing futile care to save a dying patient (Mealer et al., 2009). Many of these are the same types of traumatic events that nurses in the emergency department might witness, except ICU nurses likely witness them for a greater length of time.

Another possible explanation for why ICU nurses develop STS is due to the bodily care of other people (McGibbon et al., 2010). This was deemed a stressful factor because it is an immensely physical, intimate act. The caring of another's body brings a connection between two people that can have emotional consequences (McGibbon et al., 2010). The long-term caring for open wounds or surgical wounds can be visually traumatic. Likewise, performing futile life-saving acts on a patient you have cared for can be emotionally traumatic for a nurse. Nurses in these situations can sometimes experience undue feelings of guilt for what is happening to their patients, which may contribute to stress and STS (Mottaghi et al., 2020). These situations can cause increased stress – even STS – on an ICU nurse.

ICU Nursing Responses to Trauma

ICU nurses may have varying responses to trauma, some of them similar to those of emergency nurses. One survey found that ICU nurses were positive for anxiety (16%), depression (13%), PTSD symptoms (22%), and full-criteria PTSD (18%: Mealer et al., 2009). In the same study, 86% of nurses met at least moderate symptoms of burnout, including emotional exhaustion, depersonalization, and lack of personal accomplishment (Mealer et al., 2009). A similar study by Mason et al. (2014) found that 73% of nurses scored average and 27% scored high on a measure regarding compassion satisfaction, with 58% scoring average and 42%

scoring low on burnout. This shows that regardless of other mental health problems, burnout is an issue within ICU nurses.

A second survey on ICU nurses found that 57% of respondents reported at least low levels of job burnout (Sacco et al., 2015). Nurses who met criteria for both PTSD and burnout syndrome reported problems with their ability to complete household duties and tasks, relationships with friends and family, participation in leisure activities, and overall functioning and satisfaction with life (Mealer et al., 2009). The implication here is that what nurses experience in the workplace affects them in other areas of their lives. ICU nurses may not be the kind who leave work at work, but rather take home with them their work stressors. Their stress seems to spill over into all areas of their lives.

Among nurses who participated in the Maslach Burnout Inventory, emotional exhaustion was the most common complaint and seemed to be linked to physical exhaustion and emotional stress (Bakhamis et al., 2019). Along with that was feeling a sense of depersonalization which found them disengaging from work (Bakhamis et al., 2019). This depersonalization seems to occur concurrently with emotional exhaustion (Bakhamis et al., 2019). Mealer et al. (2009) reported similar findings, most notably that a high number of ICU nurses met at least moderate burnout symptoms, including emotional exhaustion and depersonalization. The problem with depersonalization and disengagement from work is that it leads to poor patient care. Nurses who are not connecting to their patients may not be providing the high level of care that their organizations desire and ask of them.

Contributing Factors to ICU Responses to Trauma

Many factors contribute to the varied negative emotional and physical responses ICU nurses have to trauma. Several of these factors are workplace-related. Work stress that

contributed to feelings of burnout and STS include high work demands, role conflict, and work overload (Barr, 2017). This includes the number of patients a nurse is asked to care for during a shift, being expected to fulfill multiple roles (nurse, housekeeping, etc.), and how long the shifts are scheduled. Additionally, higher exposure to trauma patients and working long hours per shift (i.e., twelve hours as opposed to eight hours) can contribute to burnout and STS (Hinderer et al., 2014). Being asked to care for more than one trauma patient at a time can be detrimental to a nurse's work stress.

A further workplace stressor involves management. In each unit, a charge nurse typically oversees all of the nurses who are caring for patients. The charge nurse is the person who a nurse would consult about issues with patients. Due to the number of nurses and therefore patients a charge nurse is responsible for, charge nurses can develop STS as well. It has been found that charge nurses with high STS might inadvertently create or contribute to an atmosphere of high stress for other nurses (Al-Majid et al., 2018). This high-stress environment can be a determining factor when a nurse decides to leave the workplace (Al-Majid et al., 2018). These management issues exist concurrently with the other emotionally challenging issues that nurses face, such as developing caring relationships with patients and their families (Arnold, 2019). A charge nurse must tend to these relationships as well as their relationships with the nurses they oversee.

Of further consideration is the role of empathy. Empathy may be negatively connected to compassion fatigue and STS in nurses (Mottaghi et al., 2020). ICU nurses may feel excessive empathy leading to feelings of guilt and undue responsibility toward their patients (Mottaghi et al., 2020). Arnold (2019) also reported that STS can be predicted by the empathetic bond

between nurses and the patients and patients' family members they care for. This can affect their performance in the workplace and cause dysfunction in their personal lives.

Personal factors contribute to nurses' responses to trauma as well. Gender has been examined in nurses with STS, and being female appears to be a risk to developing compassion fatigue in ICU nurses (Milligan & Almomani, 2020). A second personal factor that contributes to a nurse's response to trauma may be how many years that nurse has worked in ICU. Working for a longer duration of time in ICU was also found to be a risk for developing compassion fatigue (Milligan & Almomani, 2020). Further, the level of education a nurse has obtained may be predictive of how they respond to trauma. Nurses with higher levels of education, such as a graduate degree, were 18% more likely to develop PTSD than nurses with a bachelor's degree (Mealer et al., 2017).

Personal resilience is also a factor in the development of STS. In one study, resilience was found to be a mediating factor in the development of PTSD, and was correlated with higher levels of competence, leadership, and perseverance (Mealer et al, 2017). Those who have developed resiliency often demonstrate other protective personal characteristics as well. In a second study, resilience was negatively correlated with STS and job burnout (Oginska-Bulik & Michalska, 2020). This means that psychological resilience may act as a protective factor from the negative repercussions of work stress.

Compassion satisfaction may act as a buffer similarly to resilience in nurses. Of note is that while 57% of nurses in a survey reported job burnout, the same percentage of them also scored in the average range in compassion satisfaction, with 43% scoring in the high range (Sacco et al., 2015). This may indicate that while ICU nurses feel some low level of job burnout, the satisfaction they feel in providing compassionate care acts as a buffer. It has also been

suggested that since nurses work closely not only with patients but also with their families, that these connections can act as a secondary protective buffer against patients' trauma (Robins et al, 2009). Further, compassion satisfaction is correlated with job knowledge and patience, leading some to conclude that caregiving satisfaction may lead a nurse to be more patient in their care of others and increase their desire to grow in knowledge in order to be a better care-provider (Mohammadi et al., 2017).

The Role of Social Supports in ICU Nursing

Social support plays a role in the development of STS in ICU nurses. Positive social support has been positively correlated with posttraumatic growth (Marirean, 2016). Nurses with solid social networks may be able to develop effective coping strategies for dealing with workplace stress (Mairean, 2016). Social support in ICU nurses was found to include workplace relationships with other nurses in addition to other close adult relationships (Barr, 2017). Workplace relationships can be important to nurses because they share an understanding of what each other is encountering on a daily basis. Workplace relationships also keep nurses engaged in their place of work. In a small sample of ICU nurses, it was found that burnout and compassion fatigue decreased as workplace engagement increased (Mason et al, 2014). This could be because nurses have adjusted to a high level of coping with the frequent stress of the workplace, as well as they relationships they find there (Mason et al., 2014).

Results on the Workplace of STS in ICU Nurses

High levels of STS in ICU nurses can have negative implications for hospitals. Nursing burnout might lead a nurse to be less engaged with his or her patients, which can lead to poor patient care or patient dissatisfaction (Bakhamis et al., 2019). In addition, burnout can lead a nurse to make increased medical errors (Bakhamis et al., 2019), possibly due to inattention or

distraction. Nurses may have a hard time being present in their work environment due to the stress they experience (McGibbon et al., 2010). These results can be detrimental for patients and hospitals.

Nursing burnout can also lead to job turnover (Bakhamis et al., 2019). This is especially true for nurses who are early in their careers (Kelly et al., 2015). Job turnover is financially costly for hospitals because it requires recruitment and training, and can leave them short staffed in the meantime. For these reasons, it has been suggested that hospitals need to spend time not only recruiting nurses but matching efforts to retain them as well (Kelly et al., 2015).

Early identification, education, and development of tools and strategies for combatting STS can help hospitals better help their nursing staff. Education needs to include warning signs of STS (i.e., alcohol, drug, or food abuse; anger or irritability; chronic tardiness; overworking; exhaustion or sleep disturbances; and depression and hopelessness), as well as the idea that emotional distress is not a sign of weakness in the provider, but rather a potentially normal reaction to an abnormal event (Tabor, 2011). Interventions should include managing stress and anxiety; increasing the quality of the provider's work and overall effectiveness; and mitigating the tendency to detach from patients and peers (Tabor, 2011). Rauvola et al. (2019) suggest fit-based approaches that take into account employee workload, organizational values, and the general work environment. These tools can help mitigate STS in nursing staff.

The authors of one study suggest that resiliency programs for nurses may help with symptoms for compassion fatigue and STS (Pfaff et al., 2017). Their suggested course of action includes surveys to determine and monitor compassion fatigue and STS levels, focus groups in which nurses can talk about how they are feeling, and education about compassion fatigue and STS and how to combat it (Pfaff et al., 2017). Reflection practices (mindfulness, guided

visualization) at work as well as at home may reduce symptoms of compassion fatigue and STS (Pfaff et al., 2017). Fostering resilience in nurses is important because it has been shown to be negatively correlated with both STS and job burnout, meaning that psychological resilience may act as a protective factor from the negative repercussions of work stress (Oginska-Bulik & Michalska, 2020).

Social Supports and their Role

Social supports can be very important in the life of a nurse. Many studies agree that social supports can be found in the form of friends, family, significant others, outside groups, coworkers, and even pets (Savic et al., 2019; Von Rueden et al., 2010; Wang et al., 2018). In the workplace, social support may come from coworkers, senior nurses, and supervisors or managers (Gifkins et al., 2017).

Social support can come in different forms. It can be conceptualized as a network's ability to provide psychological and material resources that benefit a person's capacity to deal with stress (Wang et al., 2018). It can look like discussing problems and issues with family and friends, which can lessen work stress somewhat (Gifkins et al., 2017). It may come as an encouraging word or hug from a coworker, friend, or family member, or be as extravagant as offers of financial or emotional support during a crisis (Fahy & Moran, 2018). Social support at home may look like families helping around the house while a nurse is working or sleeping (Gifkins et al., 2017). Social support can even come from institutions themselves by providing enough nurses to adequately cover the work shifts, thus relieving some of the stress nurses feel (Austin et al., 2009).

There are many benefits to having social support, which can have a protective effect on the emotional lives of nurses. The core purposes of social support include alliance, attachment,

affirmation of worth, guidance, nurturance, and social integration (Fahy & Moran, 2018). These core purposes serve to bolster the nurses' feelings of self-efficacy, which can help with job burnout or stress, emotional exhaustion, and anxiety in nursing populations (Fahy & Moran, 2018). Peer support may also help a nurse to feel more confident, competent, and successful at work (Barnard et al., 2006). Nurses who feel supported in their lives tend to be healthier all around.

In addition, Fahy and Moran (2018) identify four acts of social support: concrete, advice, esteem, and emotional support. Concrete support may include helping a coworker with a task, such as taking a patient to a CT or MRI scan. Advice may include giving practical assistance on how to perform a job skill. Esteem can come in the form of words of affirmation that the nurse is doing a good job, even when things are difficult. And emotional support can involve listening to a fellow nurse talk about a hard time that they are encountering.

In one study, social support from supervisors and work peers was associated with reduced levels of burnout and increased job satisfaction (Gifkins et al., 2017). Support from supervisors in particular can help both experienced and inexperienced nurses cope with workplace stress (Gifkins et al., 2017). Specifically mentioned as supportive were help with clinical skills, time management, and being there for emotional support (Gifkins et al., 2017). When nurses feel supported by a team, they perceive themselves as being healthier and less prone to stress (Austin et al., 2009).

Work support in particular can be helpful for nurses. 85% of trauma nurses in a study stated that their relationships with coworkers were positive and good (Von Rueden et al., 2010). Talking with colleagues was described as the most helpful coping mechanism (Von Rueden et al., 2010). In another study, the majority of work support was stated as coming from peers, then

supervisors, and finally the organization (Barnard et al., 2006). Support was characterized as informational followed by emotional (Barnard et al., 2006). While peer support may help a nurse to feel competent and successful in their work, it was not found to be a strong mediator of burnout levels in this study (Barnard et al., 2006). Supervisor support was also found to not be a strong mediator of burnout levels, although supervisor conflict was frequently noted as a reason to leave nursing (Barnard et al., 2006). Social support within the workplace setting can provide the benefits of professional supervision and informal debriefing with colleagues as time to reflect on situations and gain new perspectives or skills (Savic et al., 2019).

Strong social networks can prove beneficial for dealing with adversity. People who feel that their social network provides high levels of support tend to have healthier coping behaviors, see difficult situations as less threatening, and are better able to regulate negative emotions (Wang et al., 2018). These social supports may act as a protective barrier against stress in the lives or nurses (Fahy & Moran, 2018). A study by Wang and colleagues (2018) found that friend and coworker support had a significant positive effect on self-efficacy, which was consistent with previous research that supportive work environments have the potential to empower employees, increase self-efficacy, and generally improve professional performance (Wang et al., 2018).

The absence of social supports can be detrimental to nurses. In a study by Von Rueden and colleagues (2010), nurses who did not utilize a support system, such as friends, family, or outside groups, scored higher levels of STS than those who did. This contributes to the idea that social support, whether outside or within the workplace, increases feelings of self-efficacy and the ability to handle the situations that arise on the job (Wang et al., 2018).

Emotions and relationships can be difficult in a hospital. Any relationship within the workplace that involves emotion (e.g., the patients', their families', or other professionals') has the potential to be draining for nurses (Austin et al., 2009). Interestingly, emotional connection with a support team and other resources (e.g., family, peers, etc.) are found in relationships (Austin et al., 2009). This creates an interesting paradox for nurses, and sometimes leads to nurses not wanting to connect with people outside of work (Savic et al., 2019).

Experienced and inexperienced nurses alike have described feeling isolated from friends while they work, especially during shift work (Gifkins et al., 2017). Even though many nurses seek out their social network when away from work, some choose not to. A small group of participants in a study stated that they preferred to avoid socializing outside of work and preferred to disconnect from other when not working (Savic et al., 2019). While this demonstrates that some people need to disconnect in order to recharge, the concern is that they are missing out on coping mechanisms that social networks can provide in order to protect against the adverse effects of the job.

Treatments for STS

At this time, there does not exist a best practice for treating STS. This may be because STS does not have its own diagnostic standard and is not recognized by the American Psychiatric Association (Harris, 1995). Since its symptoms mirror those of PTSD, it may be possible to treat people who have STS in a similar manner to how those would be treated with PTSD. Sprang et al. (2019) suggest that interventions be targeted toward people who have not only STS symptoms but functional impairment as well. This functional impairment may include impaired functioning personally (i.e., losing connections with important relationships),

professionally (i.e., inability to concentrate at work), and physically (i.e., inability to sleep at night). These would indicate people who are likely to need professional intervention.

Perhaps as important as treating STS is preventing it. This can be done through increasing awareness and education about STS in target groups such as nurses, including signs, symptoms, and risk factors of STS (Gates & Gillespie, 2008). Education efforts may include not only identifying symptoms, but also identifying methods to prevent symptoms. This can include reframing events, setting boundaries, and methods for managing stress, such as self-care and activities outside of work (Gates & Gillespie, 2008). Sprang et al. (2019) suggest that prevention may also include promoting safety and reducing exposure to trauma-related stressors, psychoeducation about posttraumatic stress symptoms, and education about how to reduce risk factors and increase protective factors. Through identifying symptoms and methods to prevent symptoms, nurses have better chances of not developing STS in the first place.

Education about STS needs to start at the organizational level. When organizations are informed about the risks that STS pose to their staff (i.e., nurses), they can help implement programs designed to prevent or alleviate STS (Sprang et al., 2021). These programs may be aimed at the nurses, their supervisors, or even employee assistance programs (EAP) who may be a first line of help. Nursing supervisors could be trained on how to recognize STS symptoms and how to help a nurse who seems to be struggling, including debriefing after a traumatic event or making a referral to EAP (Gates & Gillespie, 2008). All of these actions can help normalize what a nurse is going through rather than stigmatizing her or him as a poor employee who cannot keep up with the job.

One reason nurses at a hospital may feel stigmatized by their STS is because hospitals tend to have a "culture of silence" (Robins et al., 2009, p. 278). This manifests in a belief that

STS indicates professional weakness. Some hospitals even believe that discussing STS in the workplace has the potential to increase the instances of STS and the intensity of employee reactions (Hensel et al., 2015). Hospitals need education from the top down regarding the commonality of STS and that it can impact anyone who works there. If hospital leadership was to acknowledge STS as a potential occupational hazard during new employee orientation, it would not only teach the new employees about what it is but also normalize it for them (Robins et al., 2009). This normalization is a necessary step for everyone who works in the hospital so that no one feels ostracized when it happens.

Education about how to prevent STS may not work for everyone. For those who do develop STS, treatment may be needed. Bercier and Maynard (2015) suggest that individual therapy with or without group therapy may be helpful for people with STS. Specific therapy types that may be beneficial include interpersonal psychotherapy, cognitive behavioral therapy, psychoeducation, crisis debriefing, psychological debriefing, and crisis intervention stress debriefing (Bercier & Maynard, 2015). Treatment may also need to focus on coping strategies that may be problem-focused or emotion-focused (Rauvola et al., 2019). Each of these modalities could be completed in individual or group sessions. While some nurses may prefer the anonymity of individual therapy, group therapy may be helpful to normalize their feelings and reactions.

Sprang et al. (2019) recommend psychoeducation and therapeutic reexamination of trauma-related memories. This reexamination should include how the memories have altered the person's emotions, beliefs, and behaviors. Therapeutic reexamination is similar to debriefing, in which the nurse discusses their perception of what happened and their reactions (Gates & Gillespie, 2008). The psychoeducation should be aimed at teaching what common reactions look

like as well as alternatives to avoidance behaviors (Sprang et al., 2019). Through these practices, survivors learn to access the traumatic memory and restructure it in a safe, intentional way, helping them to find meaning in the events the witnessed and the aftermath thereof. This gives them a sense of control over the memories and any distress they may cause.

Treating STS often looks like treating symptoms. One possible way this can be done is through a five-step sensory-based algorithmic approach. The steps include (1) the trauma workers recalls all aspects of the trauma with little or no emotional response, (2) the trauma worker explains why the STS and subsequent emotional responses happened, (3) the trauma workers differentiates the incident in both positive and negative ways, (4) the trauma worker becomes symptom free, and (5) her or his self-esteem is equal to or better than it was before treatment (Harris, 1995). In this way, the trauma worker explores a personal model of the trauma and their world, gaining an understanding and experience of how they and others perceive the world (Harris, 1995). In doing so, the trauma worker gains new insight into her or his own feelings about the trauma and how those feelings have been managed. This sensory-based approach can be done individually or in a group setting. If conducted in a group setting, the trauma worker would have the experience of normalizing his or her feelings in comparison to those of others in similar situations (Gates & Gillespie, 2008). This is good for healing and eventually self-esteem.

Hypnosis can be used in treating STS. It can be effective in recovering and resolving the traumatic memories of those who work with trauma. Hypnosis commonly consists of the processes of stabilization, trauma processing, and integration of the memories (Poon, 2009). These process phases help ground and stabilize the client (Poon 2009), allowing the client to access traumatic memories in a way that is not overwhelming. There is a danger of transference

and countertransference, however, that needs to be acknowledged from the start (Cerney, 1995). The content shared can be difficult for both the client and the therapist, making all parties vulnerable to trauma symptoms.

Imagery is another treatment that can be effective in treating STS, especially in those who report nightmares, flashbacks, and intrusive memories (Cerney, 1995). Kiley et al. (2018) describe imagery as a guided relaxation process in which a therapist uses descriptive language to help the listener visualize a calming, detailed image in hopes of achieving a relaxed state. From this relaxed stated, the listener may enter into a dream or nightmare, memory, flashback, or an intrusive thought and go over the experience again. Cerney (1995) suggests that at the point at which the trauma is about to begin, telling the client to freeze the scenario. From that point, the client may visualize bringing someone into the trauma experience with them to discuss the trauma. The client may also be asked to consider alternative points of view of the trauma experience, which helps them to reconsider their painful view of the memory. Through these techniques, imagery clients are given multiple ways to help them reimagine the painful images from trauma in order to work on moving forward.

Cerney (1995) touts the use of imagery work as "almost miraculous" (p. 144). They state that while it is not entirely known why this treatment modality is so effective, there are three possible reasons: (1) the client gains a feeling of control from monitoring and rehearsing the images, (2) the client gains a different meaning or internal dialogue about the image, and (3) the client gains enhanced coping skills by mentally rehearsing alternative responses to the image (Cerney, 1995). These possible reactions to imagery treatment make it effective in working with the various nightmares, flashbacks, and intrusive thoughts people may experience after a trauma. This applies to people who have witnessed trauma secondhand as well, as they are given the

opportunity to gain new perspectives on what they have seen or heard about the trauma that someone else endured firsthand. Kiley et al., (2018) affirm this idea as they found that guided imagery in control and experimental groups resulted in statistically significant changes in scores for mental health professionals suffering from compassion fatigue and burnout.

An increasingly popular treatment for trauma that may work for STS is eye movement desensitization and reprocessing (EMDR). It has been shown to be effective in treating STS in emergency workers such as police and police detectives, as well as railroad workers (McCammon & Allison, 1995). This treatment focuses on the way memories are stored in the brain and how they are accessed. It theorizes that when memories are not fully integrated in the brain, they become a hindrance for healing (Peck, 2012). EMDR utilizes bilateral stimulation (i.e., left or right tapping, auditory tones, etc.) to activate the right and left hemispheres of the brain to access traumatic memories, allowing the client to process the images, thoughts, emotions, and body sensations which they associate with the traumatic memory (Peck, 2012). This would help someone affected by STS to process the secondhand trauma they have witnessed and allow them to resolve they symptoms they experience.

There is some concern that using EMDR on recent trauma memories may not be appropriate. EMDR was established using clients with established trauma memories and chronic PTSD (Shapiro, 2009). It is not known if more recent memories are fully consolidated into the brain and psyche (Shapiro, 2009), leaving a question of if EMDR is truly appropriate for clients with recent trauma exposure. This may include people with STS from short-term exposure to trauma, such as nurses who care for patients for relatively short periods of time. Roberts et al. (2019) found that brief EMDR was moderately effective in early psychological intervention for traumatic stress, but that trauma-focused CBT was more effective. While this report shows that

brief EMDR can be effective with early trauma, it is not widely known if regular EMDR is acceptable for early intervention at this time.

There are some interventions which clients can practice on their own without the aid of a trained professional. Mindfulness is one such practice that is thought to aid in fighting STS. It is a psychological factor that is thought to contribute to resilience, which may contribute to the development of STS (Harker et al., 2016). It is a state of intentional awareness in which one brings their attention to what is happening in the present in a nonjudgmental and accepting way (Harker et al., 2016). This leads to tolerance and acceptance of emotions, including negative emotions that may contribute to or perpetuate STS. Practicing mindfulness is associated with positive aspects of psychological wellness and is negatively associated with burnout and STS (Harker et al., 2016). This means that practicing mindfulness may have positive benefits for workers in high-stress jobs who witness trauma, such as nurses. Rauvola et al. (2019) suggest mindfulness in combination with meditation, writing workshops, programs that focus on mentoring and resiliency, and training in coping mechanisms for workers who experience or witness trauma.

Self-care is another intervention that may help with STS. Similar to mindfulness, self-care may assist helping professionals to combat burnout (Newell & MacNeil, 2010), which is linked to STS. Strategies may include setting realistic work goals with regard to client care, taking coffee and lunch breaks, and getting though rest and relaxation (Newell & MacNeil, 2010). Self-care may also include developing diverse interests and experiences when not working (Dutton & Rubenstein, 1995). Each of these practices allows a helping professional to take time and space to care for the self. This can be important to the psychological wellbeing of those who care for others.

A further self-care intervention may be found in relationships with other people. Cultivating and maintaining personal support networks is important for professional helpers (Dutton & Rubenstein, 1995). Just as social supports are important to the actual victims of trauma, they are important to trauma workers as well. Trauma workers may need to engage their biological, marital, and work families for encouragement, advice, aid, and companionship (Harris, 1995). Through these methods, helping professionals can be cared for themselves, which contributes to self-care.

Gaps and Contradictions in the Literature

Contradictions in the literature mainly center on empathy and the role of connection to patients and their families. In the case of empathy, Arnold (2019) states nurses are at risk for STS due in part to the level of empathy they demonstrate with their patients and patients' families. In this light, high levels of empathy are portrayed as a risk factor. Empathy as compassion satisfaction, however, has been discussed as a protective factor. Sacco et al. (2015) stated in their study that even when nurses scored in the average- to high-ranges for job burnout, their compassion satisfaction acted as a buffer against the negative effects of burnout. There is no clear explanation for the differences in the effect of empathy.

A nurse's connection to families is also an area that contains contradictions. According to Adriaenssens et al. (2012) and Arnold (2019), emergency nurses are sometimes stressed by the emotional families of their patients. This stress acts as a risk factor for STS. Robins et al. (2009) states the opposite, that ICU nurses' connections with patients' families can act as a protective buffer against trauma. This is a very different experience than is elsewhere cited. The explanation may lie in the duration of the connection with the families, but that is information that is not provided in either study.

The biggest gap in the literature is that very few of the studies done on STS compare levels between nurses in different units. Of the reports that this study cites, only six were designed to examine nurses in multiple units (Al-Majid et al., 2018; Hinderer et al, 2014; Kelly et al., 2015; Mealer et al., 2009; Mottaghi et al., 2020; Robins et al., 2009). From those studies, only two compared STS across multiple units. Mealer et al. (2009) compared STS and burnout among ICU, high-stress non-ICU, other non-ICU, and outpatient nursing, and reported that outpatient nurses had lower levels of STS and burnout than the other units. Robins et al. (2009) compared all of the providers in a children's hospital to a set group of trauma workers, with the findings that compassion fatigue and burnout were similar in both groups.

None of the reports cited compared emergency nurses to other units within a hospital. Reports examined the impact of trauma on emergency nurses (Adriaensses et al., 2012), resilience (Allen & Palk, 2018), levels of STS (Duffy et al., 2014; Hinderer et al., 2014; Roden-Foreman et al., 2017), and factors that lead to STS (Ratrout & Hamdan-Mansour, 2017, 2019). While these reports are helpful in educating about emergency nurses and STS in general, they do little to advance our knowledge of STS compared to other groups.

Purpose of This Study

The purpose of this study is to fill the gap in knowledge about which units of a hospital have the highest levels of STS. The hypothesis is that emergency department nurses have the highest levels of STS due to the types of traumas they experience in the emergency department and the frequency with which they see them. While nurses in other units may provide the bulk of the care for those patients after they leave the emergency department, the trauma at that point is less pressing and raw than it may be when the emergency nurses encounter it.

Summary

Secondary traumatic stress is a mental health disorder that is seen most often in helping professions that work with trauma victims, such as nurses. Theories regarding why nurses develop STS include the Trauma Transmission Model, the Ecological Framework of Trauma model, and the nurse as wounded healer. Many authors have detailed what STS looks like in nurses and how it develops, including what types of traumatic events nurses encounter, nursing responses to trauma, contributing factors to nursing responses, the role of social support, and the results on the workplace of STS. These factors have been examined for emergency department nurses, intensive/critical care nurses, and other specific nursing units. What is lacking in the literature, however, is comprehensive comparisons between nursing units to determine if some nurses are prone to higher levels of STS than others, and which units those are. This particular study answers the question, "Do emergency nurses have higher levels of STS than nurses on other units?" The answer to this question could help hospitals design support programs tailored to specific units' needs.

CHAPTER THREE: METHODS

Overview

This is a quantitative study whose purpose is to determine which unit of nurses at a particular level-II trauma hospital experience the highest rates of secondary traumatic stress (STS). Rates of STS were measured by completing the Secondary Traumatic Stress Scale. Research questions and hypotheses address who experiences the most STS. In addition to responding to the Secondary Traumatic Stress Scale, participants also completed a short questionnaire regarding demographics, support system information, and how much trauma they encounter.

Design

A quantitative study design was used. In this case, the purpose of the study is to examine the incidence of secondary traumatic stress within a nursing population. As quantitative variables generally provide information about differences between participant characteristics (Heppner et al., 2016), this design was most appropriate for the present study. Common to quantitative measurements is the Likert scale (Heppner et al., 2016). Bride et al. (2004) describe the Secondary Traumatic Stress Scale as a self-report instrument used to examine the frequency of symptoms associated with STS using a Likert scale. Its design makes it appropriate for use in this setting.

Research Question

The study addresses one primary research question:

RQ: Do emergency nurses experience more secondary traumatic stress than nurses in other units of the hospital?

This was measured by the overall score on the Secondary Traumatic Stress Scale, which will be the dependent variable. The nursing units are the independent variables. In addition to the overall score, subscores measuring intrusion, avoidance, and arousal were reported for each nursing department. The overarching goal of this research question is to better understand relative STS levels across departments.

Hypotheses

The research question tests null and alternate hypotheses:

H0: Emergency nurses do not experience more secondary traumatic stress compared to other units, as measured by the Secondary Traumatic Stress Scale.

H1: Emergency nurses experience more secondary traumatic stress than do nurses in other units of the hospital, as measured by the Secondary Traumatic Stress Scale.

Participants and Setting

The participants for the study were drawn from four nursing units at a large level-2 trauma hospital in northeast Indiana. The 440-bed hospital is a Magnet location, meaning that it has exceeded standards for nursing excellence. The hospital is part of a larger health system that employs more than 13,000 people. At this particular location, there are 15 distinct nursing units. The sample for this study was taken from four of those units: emergency department, intensive care, labor and delivery, and 7th floor medical.

According to Warner (2013), 76 participants is the required minimum for a medium effect size with statistical power of .8 at the .05 alpha level for ANOVA. According to Heppner et al. (2016), researchers suggest a minimum 50% return rate for an adequate basis for reporting. In a survey of social workers, Ting et al. (2017) reported a sample size of 275 and a response rate of 52%. When validating the STSS into the French language, Jacobs et al. (2019) noted 220

participants at a 78.6% response rate. In surveying emergency department nurses in Ireland, Duffy et al. (2015) achieved a sample size of 105 for a response rate of 90%.

The sample came from four nursing units: emergency department, intensive care, labor and delivery, and 7th floor medical. The emergency department nurses tend to be exposed to a varying complexity of situations, ranging in scope from flu-like symptoms and broken bones to strokes, heart attacks/cardiac arrests, and traumas (i.e., automobile accidents, acts of violence, etc.). Intensive care nurses generally care for patients with severe illnesses, such as severe coronavirus, cardiac arrest, and comas. Labor and delivery nurses spend most of their time assisting in baby delivery and post-partum care, but they sometimes witness difficult births and loss of life. The nurses on 7th floor medical are the control group and rarely see traumatic situations. They generally care for patients who have basic problems like influenza or mild broken bones.

Response Rates

Table 1

	7M	ED	L/D	MICU	Total
Responses by unit	12	58	19	21	110
Population	44	85	123	98	350
Rate	27%	68%	15%	21%	31%

Between the four units, 350 nurses had the opportunity to partake in the STSS and 110 nurses responded (31.4%). Labor and Delivery was the largest unit at 123 nurses and had 19 participants (15.4%). MICU was second largest at 98 nurses and had 21 (21.4%). Emergency had 85 nurses and 58 participants (68.2%). 7 Medical was the smallest unit at 44 nurses and 12 participants (27.3%). Emergency initially had a near-zero response rate at the end of the first week of participation. A concerted effort was made by the researcher and hospital administration to more actively engage the nurses in Emergency. Several of the managers in the

Emergency Department talked with the nurses and helped distribute copies of the STSS to individuals when possible. This directed effort resulted in the final high rate of response for that department.

The estimated goal for the sample was 150 participants. 110 actually participated. The sample consisted of 95 females and 15 males. The largest age group was 26-35 years old. The largest group for time on the job was 3-8 years. 41 nurses report working the day shift, 42 report working the overnight shift, and 27 reported working a mix of both shifts.

The sampling for the study was a convenience sampling. Creswell and Creswell (2018) describe a convenience sample as one in which participants are chosen based on their availability and convenience. Since the instrument was distributed to the nurses while they were at work, this is the sampling that made the most sense. All nurses in the chosen units were invited to participate at their convenience. They were recruited through emails explaining the study and in-person explanation by the author and the unit leadership. No compensation was offered for participation.

Instrumentation

The instrument used was the Secondary Traumatic Stress Scale (STSS) by Bride, Robinson, Yegidis, and Figley (2004). This instrument has been used in numerous studies (e.g., Dominguez-Gomez & Rutledge, 2009; Duffy et al., 2015; Mairean, 2016; Oginska-Bulik & Michalska, 2020; Ratrout & Hamdan-Mansour, 2019; Roden-Foreman et al., 2017; Wolf et al., 2020). The instrument measures levels of secondary traumatic stress (Bride et al., 2004). The STSS has 17 items, and respondents use a Likert-type scale, ranging from 0 to 4, to indicate level of agreement to statements regarding feelings within the past week (Bride et al., 2004). Responses were as follows: Never = 0, Rarely = 1, Occasionally = 2, Often = 3, and Very Often

= 4. The combined possible score on the STSS ranges from 0-68. The instrument measures levels of secondary traumatic stress, where a score of 0-28 indicates Little or No STS, 28-37 indicates Mild STS, 38-43 indicates Moderate STS, 44-48 indicates High STS, and 49 and above indicates Severe STS (Bride et al., 2004). In addition, the STSS has subscales that specifically measure intrusion, avoidance, and arousal symptoms.

In terms of reliability, the full STSS has a reliability of .93, with the Intrusion subscale at .80, the Avoidance subscale at .87, and the Arousal subscale at .83 (Bride et al., 2004). The tool has been shown to have high construct validity as measured through both convergent and discriminant validity. The STSS scores correlate with the extent to which the client population is traumatized (M = 3.19, SD = .87), the frequency with which the population works with trauma (M = 3.49, SD = .93), and the severity of depressive (M = 1.74, SD = .79) and anxiety (M = .88, SD = .79) symptoms as reported by the population in the past week (Bride et al., 2004). Further, the STSS shows no correlation to unrelated variables, such as age, ethnicity, and income (Bride et al., 2004).

In addition to discriminant and convergent validity, Bride et al. (2004) also performed structural equation modeling techniques and found adequate model fit of greater than .90 for the GFI (.90), CFI (.94), IFI (.94), and RMSEA (.069). Further, Bride et al. (2004) tested the STSS in terms of factor loading, t-values, and squared multiple correlations. Factor loading ranged from .58 to .79 and statistically significant ($\alpha = .05$) and t-values ranging from 10.13 to 15.68 (Bride et al., 2004). In terms of squared multiple correlations (R^2), the values ranged from .33 to .63 (Bride et al., 2004).

In addition, 6 questions were added to the STSS to capture data related to support systems used by nurses and respondent demographics. These items are original to this study.

The questions about demographics include topics such as age, gender, time on the job, and whether the nurses work the day or overnight shift. These items are multiple choice. The question about support systems gave the nurses multiple choices (e.g., spouse/partner, other family, work peers, outside friends, professional counseling) and asked the respondents to identify all that apply. The final question asked the nurses to identify on a scale of 0-4 how many traumatic situations they witnessed in the past week.

There is a potential for external threats to the instrument's validity. First, there may be differential response rates to the instrument. This would be seen in some nursing units completing higher numbers of the instrument than other units, or certain age groups of nurses completing the instrument in higher numbers. Second, the nurses may perceive a bias in responding a certain way to the instrument. Although the study instrument is anonymous, nurses may fear that their responses regarding stress will reflect negatively upon them individually or as a unit. This could result in underreporting stress levels.

Procedures

Approval from the hospital's IRB and from Liberty University's IRB was gained in 2022 after the author completed all required steps. The study instrument was distributed in participation with the hospital. Paper copies were placed at nursing stations for two weeks over January and February of 2023. A short instruction sheet was included with the instruments along with a preapproved consent form, and study instruments were kept anonymous. Instruments were returned using a plain envelope. Before the study instrument was distributed at nursing stations, the researcher and hospital sent an email to all nurses in the four sampled departments describing the purpose of the study and how it would be used. Hospital leadership encouraged nurses to respond but did not offer any incentive or compensation to do so. Nurses were encouraged to

complete the instruments at their convenience, leading to a convenience sampling of participants. At the end of the first week, a second email was sent to reminder nurses about the study.

At the end of two weeks, the completed instruments were collected from all participating units. The data was recorded in Microsoft Excel for storage and SPSS software for analysis. ANOVA was run in SPSS using the data. Results were further recorded in Microsoft Excel for storage. Tables were generated as appropriate.

Data Analysis

The hypothesis states that emergency nurses experience more secondary traumatic stress than do nurses in other units of the hospital. To test this hypothesis, the STSS was administered across four nursing units of the hospital. The independent variable is the nursing unit, and the dependent variable is the level of STS as identified by the overall score on the STSS. The analytic method used to examine the data was an ANOVA. According to Heppner et al. (2016), ANOVA is used to compare multiple groups along a certain variable. In this case, that variable is the overall STSS scores. Because this hypothesis compares STS across all units, ANOVA is appropriate for use. Effect size will be η^2, with $\alpha = .05$ (Warner, 2013).

In order to run the ANOVA, the Unit variables first had to be recoded from words (7 Medical, Emergency Department, etc.) into numeric values (1, 2, etc.). Once recoded, the ANOVA was run with Score as the dependent variable and UnitNum as the independent variable. Sample size (N), mean, standard deviation, standard error, confidence interval, and minimum and maximum were all displayed in one table, which can be found in the following chapter.

Summary

While STS is often studied in helping professions, rarely has it been studied as a comparison between emergency department nurses and those from other hospital units. The purpose of this study is to determine the prevalence of STS in four nursing units in a level-II trauma hospital, to examine possible reasons why some units may have more nurses with STS than others, and to identify what role social support may play in the development of STS. The Secondary Traumatic Stress Scale was used to assess for STS, and a short additional questionnaire was used to look at what trauma nurses experience and what types of social supports they rely upon. The results of these reports will be analyzed and discussed in the following chapters.

CHAPTER FOUR: FINDINGS

Overview

The Secondary Traumatic Stress Scale gathered a plethora of information. In addition to obtaining a simple STSS score, this version of the instrument gathered demographic material, including gender, number of years worked, shift worked, hospital unit, age, number of traumas witnessed in the last week, and support systems. With the exception of support systems, all of this data was statistically analyzed and reported based on hospital unit. This section also includes the mean, median, range, frequency, and standard deviation of the overall STSS scores.

Descriptive Statistics

110 participants completed the STSS. The overall mean for all STSS scores was 23.21. The median was 24, and the range was 60. The standard deviation for all STSS scores was 12.499. The data can be further broken down by unit. For 7 Medical, the mean score was 18.42 and the standard deviation was 11.188. For Emergency Department, the mean score was 22.07 and the standard deviation was 12.448. Labor and Delivery had a mean of 21.37 and a standard deviation of 10.689. MICU had a mean score of 30.76 with a standard deviation of 12.550. Full descriptives can be seen in Table 2 below.

Table 2

Descriptives

Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
7 Medical	12	18.42	11.188	3.230	11.31	25.53	2	37
Emergency Department	58	22.07	12.448	1.634	18.80	25.34	1	48
Labor and Delivery	19	21.37	10.689	2.452	16.22	26.52	3	45
MICU	21	30.76	12.550	2.739	25.05	36.47	7	61
Total	110	23.21	12.499	1.192	20.85	25.57	1	61

The data can be further described using the demographic information that was collected at the end of the STSS. This information will be described in the tables below. Each table set is comprised first of total information for the 110 participants and is then broken down by unit.

Gender

Table 3

GENDER TOTAL				
MAN	15			
WOMAN	95			
OTHER/NONBINARY	0			
GENDER BY UNIT	7M	ED	L/D	MICU
MAN	1	10	0	4
WOMAN	11	48	19	17
OTHER	0	0	0	0

Out of 110 respondents, 95 were female and 15 were male. Labor and delivery was the only unit that reported no male nurses. Emergency had the most males with 10 as well as 48 females (17% male, 83% female). MICU came in second with 4 males and 17 females (19% male, 81% female). 7 Medical had one male respondent and 11 females (8% male, 92% female).

Years Worked

Table 4

YEARS TOTAL				
0-2	33			
3-8	39			
9-15	21			
16-20	7			
21+	10			
YEARS BY UNIT	7M	ED	L/D	MICU
0-2	6	19	4	4
3-8	4	23	3	9
9-15	1	10	6	4
16-20	1	4	1	1

21+	0	2	5	3

33 respondents reported working 0-2 years (30%), 39 reported 3-8 years (35.5%), 21 reported 9-15 years (19.1%), 7 reported 16-20 years (6.4%), and 10 reported 21 or more (19%) years of nursing experience. Emergency had the highest reported numbers in all but one category (21+), but percentage-wise, each unit had the highest percentage in at least one category. 7 Medical reported the highest percentage of nurses with 0-2 years of experience at 50% (6 out of 12 nurses), and no nurses with 21 or more years of experience. MICU and Emergency had the highest percentage of nurses with 3-8 years of experience at 43% and 40% respectively (9 out of 21; 23 out of 58). Labor and Delivery had the highest percentage of nurses with 9-15 years of experience at 31.6% (6 out of 19). Emergency had the highest percentage of nurses with 16-20 years of experience at 7% (4 out of 58). Labor and Delivery had the highest reported number of nurses with 21 years or more of experience at 5 out of 19 for 26.3%.

Shift

Table 5

SHIFT TOTAL				
BOTH/MIX	27			
DAY	41			
NIGHT	42			
SHIFT BY UNIT	7M	ED	L/D	MICU
BOTH/MIX	0	25	1	1
DAY	6	17	12	6
NIGHT	6	16	6	14

There were three categories for shift: day, night, and both/mixed. The largest number of nurses worked with night shift (42 out of 110 for 38.2%), barely edging out the day shift (41 out of 110 for 37.3%). Both/mixed had the smallest number at 27 out of 110 (24.5%). 7 Medical was evenly split with 6 respondents working the day shift and 6 working the night shift.

Emergency had close numbers of day and night with 17 and 16 respectively (29.3% and 27.6%), but had more both/mixed than any other unit at 25 (43.1%). Labor and Delivery was mostly day shift with 12 (63.2%), as well as 6 night (31.6%) and 1 reporting both/mixed (5.3%). MICU had predominantly night shift reporting at 14 out of 21 (66.7%), with 6 day (28.6%) and 1 both/mixed (4.8%).

Age

Table 6

AGE TOTAL	
18-25	32
26-35	51
36-45	15
46-55	8
56+	4

AGE BY UNIT	7M	ED	L/D	MICU
18-25	5	19	3	5
26-35	5	29	7	10
36-45	1	7	4	3
46-55	0	3	3	2
56+	1	0	2	1

By far, the highest reported age group was 26-35 years old with 51 respondents (46.4%). 18-25 years old was second with 32 (29.1%), 36-45 was third with 15 (13.6%), 46-55 was fourth with 8 (7.3%), and 56 years old or older was the smallest group with 4 respondents (3.6%). With the exception of 7 Medical, all units reported that 26-35 was their largest age group. 7 Medical had even numbers of 18-25 and 26-35 with 5 each out of 12 (41.7% for each group), with only 1 person reporting being 36-45 and 56 or older (1 each for 8.3% each), and no respondents in the 46-55 category. Emergency had the highest number and percentage of 26-35 year olds with 29 out of 58 for 50%, and MICU reported 47.6% of the respondents were the same age (10 out of 21). Labor and Delivery had the highest percentage of 36-45 at 21% (4 out of 19 respondents), as well as 46-55 years old at 15.8% (3 out of 19), and 56 years old and older at 10.5% (2 out of

19). Emergency was the only department who did not have anyone in the 56 years old and older category.

Number of Traumas

Table 7

TRAUMAS TOTAL				
0	19			
1	32			
2	29			
3	14			
4+	16			
TRAUMAS BY UNIT	7M	ED	L/D	MICU
0	5	4	6	4
1	7	13	7	5
2	0	18	4	7
3	0	9	1	4
4+	0	14	1	1

In terms of traumas experienced in the previous week, 19 respondents said they encountered no traumas (17.3%), 32 stated only 1 trauma (29.1%), 29 stated 2 (26.4%), 14 reported 3 (12.7%), and 16 reported 4 or more (14.5%). 7 Medical reported the highest percentage of zero traumas with 41.7% (5) and 1 trauma at 58.3% (7). MICU had the highest percentage of 2 traumas with 33.3% (7 out of 21), followed closely by Emergency at 31% (18 out of 58). Emergency had the highest percentage of experiencing 3 traumas at 15.5% (9 out of 58) and 4 or more traumas at 21.1% (14 out of 58). Emergency had the smallest percentages of 0 traumas (6.9%) as well as 1 (22.4%). All units had at least one person who had experienced 4 or more traumas with the exception of 7 Medical.

Results

Hypotheses

The null hypothesis for this research project was that emergency nurses do not experience more STS compared to other nursing units, as measured by the STSS. Prior to running the ANOVA, the data had to satisfy certain assumptions. First, the dependent variable (STSS score) must be quantitative, which it is. Second, the scores should be normally distributed. This is checked through skewness and kurtosis. For the skew, the skewness statistic was divided by the skewness standard error giving z=1.06 (Table 8). Therefore, there is not excessive skew because the number is less than 1.96 (Warner, 2013). For the kurtosis, the kurtosis statistic was divided by the kurtosis standard error giving z=-1.06 (Table 8). Therefore, there is not excessive kurtosis because the absolute value of the number is less than 1.96 (Warner, 2013). Third, variance of scores should be approximately equal across groups, which is demonstrated in Table 2 with standard deviation between 10.7 and 12.6 for all groups. Finally, observations are independent of each other because nurses participated individually.

The data showed that emergency nurses did not have more STS compared to other units as hypothesized, but there was a statistically significant difference between one other nursing unit. For the ANOVA comparing STSS scores, the F statistic was 3.698 with a p value of .014 as seen in Table 9. This number (.014) makes the result statistically significant at the alpha = .05 level. The effect size of eta-squared is .095 as seen in Table 10, which is a large effect (Warner, 2013).

Table 8

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Score	110	1	61	23.21	12.499	156.222	.243	.230	-.483	.457
Valid N (listwise)	110									

Table 9

ANOVA

Score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1613.320	3	537.773	3.698	.014
Within Groups	15414.871	106	145.423		
Total	17028.191	109			

Table 10

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
Score	Eta-squared	.095	.004	.191
	Epsilon-squared	.069	-.024	.168
	Omega-squared Fixed-effect	.069	-.024	.167
	Omega-squared Random-effect	.024	-.008	.062

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

The alternate hypothesis for this research project was that Emergency nurses experience more STS than do nurses in other units of the hospital, as measured by the STSS. According to the data, this hypothesis was not supported. The mean value for Emergency Department was 22.07. Both 7 Medical and Labor and Delivery had smaller mean values at 18.42 and 21.37

respectively. MICU, by contrast, had a mean value of 30.76. This means that not only did the Emergency Department not have the highest score, but it was lower by more than seven points than MICU. In light of these mean values and the statistically significant ANOVA test, we can reject the alternate hypothesis that Emergency experiences more STS than other units of the hospital.

Summary

As discussed in earlier chapters, STS is a potential problem for hospital nurses. The purpose of this study was to compare rates of STS between Emergency nurses and those from three other units of a hospital using the STSS. The goal was to determine which unit of the hospital has the highest rates of STS, and the hypothesis was that the Emergency Department would have the highest rates of STS. According to the results of the STSS through ANOVA analysis, there are statistically significant differences in STS among hospital units. However, the Emergency Department at this hospital does not have the highest rates of STS but rather the MICU nurses reported the highest levels.

CHAPTER FIVE: CONCLUSIONS

Overview

The results of the STSS will be thoroughly discussed in this chapter. There will be discussion of the null and alternative hypotheses and whether or not those were supported by the results of the data analysis. These results will be compared to the current literature on the subject of STS. Implications for the study of counseling will be interpreted. Limitations to internal and external validity will be presented. Finally, there will be recommendations for future research.

Discussion

The purpose of this study was to determine if Emergency Department nurses have more STS than nurses from other units within the same hospital as demonstrated by the STSS. The research question for this study was, "Do emergency nurses experience more STS than nurses in other units of the hospital?" The null hypothesis stated that the Emergency Department does not experience more STS compared to other nursing units. Emergency nurses do not have statistically significant higher levels of STS compared to other nurses, therefore the hypothesis was accepted. The data from the STSS shows that there is not a statistically significant higher score for Emergency Department nurses compared to other units. However, the MICU unit did test significantly higher than Emergency Department.

When examining the literature on STS, this author found no studies that compared Emergency Department nurses to their counterparts in other units. In light of this dearth of information, there is no literature with which to compare these results. Mealer et al. (2009) compared PTSD and burnout among different ICU, non-ICU, and outpatient nurses and found that there was a difference in PTSD levels, with ICU nurses having the highest levels of PTSD.

In contrast, Robins et al. (2009) examined compassion fatigue and burnout and found no difference between providers in a children's hospital and a group of trauma workers. This study agrees with Mealer et al. (2009) that, in general, there can be differences between STS levels in hospital nurses.

The alternative hypothesis posited that Emergency Department nurses would experience more STS than nurses in other units of the hospital as measured by the STSS. This hypothesis was not supported. The results of the STSS showed that Emergency Department nurses scored an overall mean of 22.07 on the instrument. In contrast to the other units, 7 Medical scored a mean of 18.42, Labor and Delivery scored 21.37, and MICU scored 30.76. According to these scores, Emergency Department, 7 Medical, and Labor and Delivery all fared in the "Little or No STS" category, while MICU's overall mean put the unit in "Mild STS."

According to the literature, STSS scores vary considerably among Emergency Department nurses. One study found that nearly 40% of providers reported at least one symptom cluster for PTSD, with 13% reporting clinical levels of PTSD (Roden-Foreman et al., 2017). Hinderer et al. (2014) found that only 7% of neurotrauma nurses studied had scores consistent with STS. In a study in Ireland, 64% of emergency nurses met criteria for PTSD by meeting all three diagnostic categories (Duffy et al., 2014), leading the authors of that study to determine that the nurses likely have STS. Further, a study in Jordan found that 94% of emergency nurses scored at least 28 on the STSS, indicating that they experience STS to some degree (Ratrout & Hamdan-Mansour, 2019). The results of this study align much closer to those of Roden-Foreman et al. (2017) than to any other study. In this study, 34% of Emergency Department nurses reported at least mild levels of STS.

In examining ICU nurses, Mealer et al. (2009) found that 22% were positive for PTSD symptoms with another 18% experiencing full-criteria PTSD. A second survey on ICU nurses saw 57% report at least low levels of job burnout (Sacco et al., 2015). Al-Majid et al. (2018) found that critical care nurses had an average amount of STS, but that was using the ProQOL measurement. The ProQOL measures compassion satisfaction, burnout, and STS, with an average score for STS being 50 (Stamm, 2010). Mottaghi et al. (2020) also used the ProQOL to measure STS in Emergency and ICU nurses and found that the mean score for that study was 24.97, which was well below what is considered to be an average score using that measurement. The Mottaghi et al. study did not compare or differentiate between scores for the different hospital departments. The results of this study align much closer to those of Sacco et al. (2015) than to any other study. In this study, 71% of MICU nurses reported at least mild levels of STS.

Implications

This study adds to the existing body of knowledge on STS by comparing Emergency Department nurses to ICU and other nursing units. Previously, no other study that this author is aware of has compared Emergency, ICU, Labor and Delivery, and a medical unit. The purpose of this study has been to identify if Emergency nurses experience more STS than other units due to the number and types of traumas witnessed. This study has fulfilled that purpose, if not in the way expected as the data indicated that MICU nurses may experience higher levels of STS compared to other units; however, more research is needed to test this hypothesis.

This study is important to the field of counseling because it sheds light on who in a hospital may need more support than their counterparts in other units. The hope is that hospital administration can find ways to reach out therapeutically to these nurses who experience more STS. Hospitals may need to implement programs designed to prevent or alleviate STS (Sprang

et al., 2021), in addition to new or better methods of offering counseling through employee assistance programs (EAP). Studies suggest that preventative education about STS may be as important as treating it. Nurses and their supervisors could be trained on how to recognize STS symptoms and how to help someone who seems to be struggling, such as debriefing after an event or making a referral to EAP (Gates & Gillespie, 2008).

It is important that nurses receive assistance in treating STS. Nurses who develop STS are at risk for numerous negative impacts in their lives. These include feeling isolated from friends and family (Gifkins et al., 2017), experiencing anxiety and depression (Mealer et al., 2009), physical and emotional exhaustion (Bakhamis et al., 2019), and alcohol, drug, or food abuse (Tabor, 2011). Nurses who experience STS are at a higher risk of job burnout which can lead to job turnover (Bakhamis et al., 2019). This can be damaging for nurses' careers and costly for hospitals (Kelly et al., 2015). At this hospital 40% of nurses reported at least mild STS, with 10% reporting moderate or higher levels. In particular, over half of MICU nurses reported experiencing STS.

Christian Worldview Implications

Trauma has the potential to shake a person's religious faith (Schiraldi, 2016). Faith, in turn, has the potential to impact health. A person who has experienced or witnessed trauma may find that not only is their belief shaken but that their health suffers as well. According to Schiraldi (2016), religious commitment (prayer, reading sacred works, attendance at a religious ceremony) can help a person weather the impacts of trauma. Religious commitment may have the potential to heighten a person's self-esteem, lend greater meaning and purpose to life, bring peace of conscience, overcome aloneness through social support, and help surrender control of situations (Schiraldi, 2016). The idea of Sabbath, or a time to rest, may be most appealing to

busy nurses who experience STS. No matter what day is available, taking a day to rest can be restorative and provide respite from worldly cares (Schiraldi, 2016).

The nurses in this study reported on their support systems in the demographic questionnaire at the end of the STSS, but faith or religious community was not an option. A faith or religious support system may be beneficial to the nurses who struggle with STS. It could help them to feel not so alone in their struggles, if that is an issue, as well as helping to provide comfort and meaning to what they have witnessed. They may find an unexpected comfort in a religious support system.

Limitations

Central to the idea of this study was that due to the nature of the work being done in the Emergency Department, those nurses would have greater STS than nurses in other units of the hospital. If the work of the Emergency Department is not inherently more traumatic than in other departments, then that is a threat to the internal validity of the study. There are no known confounds or rival explanations to the internal validity because we collected data on gender, age, experience, shift worked, number of traumas witnessed. Those variables were all evenly distributed across the groups.

The greatest threat to internal validity is the relatively low response rates of Labor and Delivery and MICU as compared to 7 Medical and Emergency Department. The overall response rate for the hospital was 31%. 7 Medical had a response rate close to that with 27% and Emergency Department had a much higher rate at 68%. Labor and Delivery was the lowest at 15% and MICU had just 21%. Considering the highest rate of STS was seen in MICU which

had a relatively low response rate, the STS rate may not be fully representative of MICU in general.

In terms of external validity, most of the design of the research should be generalizable to other similar studies. One possible threat is the time of year at which the research was conducted. The data was collected over a short period of two weeks during January and February. The winter months may be slower for Emergency Department in terms of how many different types of traumas come in. By contrast, winter is a more active time for illnesses such as influenza and COVID-19 that MICU nurses may deal with in their unit. This could account for the larger than anticipated difference between the STSS means for Emergency Department and MICU.

A second threat to external validity is that Labor and Delivery was reportedly heavily staffed with travel nurses at the time during which the data was collected. Travel nurses generally only stay at one location for six to nine months at a time. There is a possibility that a short tenure in one place may present a sort of respite for nurses who may otherwise experience stress in one hospital for a longer term. This theory could account to some degree for that unit's low mean on the STSS. Since these are not traditional Labor and Delivery nurses, it may be difficult to generalize their scores to other Labor and Delivery nurses at other hospitals.

Recommendations for Future Research

There are several avenues for future research into STS in nurses. One issue that the demographic questions at the end of this study asked about but did not explore was how many traumatic events the participants had experienced in the previous week. It is possible that the number of traumatic events experienced may contribute to the level of STS that nurses

experience. The demographic questionnaire also asked about which shift the participants work. There may be value in examining the role that shift work plays in the development of STS, as night shifts and rotating shifts are generally thought to be more emotionally taxing than day shifts.

A further consideration for future research is the connection between a nurse's social support and the level of STS. Many studies agree that social supports can be found in the form of friends, family, significant others, outside groups, coworkers, and even pets (Savic et al., 2019; Von Rueden et al., 2010; Wang et al., 2018), as well as coworkers, senior nurses, and supervisors or managers in the workplace (Gifkins et al., 2017). Future research may examine if nurses with robust support systems have lower STS, or if nurses who utilize formal counseling have lower STS levels. The demographic questionnaire for this study asked about participants' support systems, but at this time that information has not been utilized.

Summary

The purpose of this study has been to research if Emergency Department nurses have more STS than nurses in other departments of the hospital. The theory behind this research question is that Emergency Department nurses often see a high volume of traumas in their work which might make them more prone to developing STS than other units. This study found that in the hospital where the data was collected, this was not the case. MICU had an overall higher mean than the other three units that participated in the study. There are different theories as to why this was the case, but more research is needed to assess if this result is generalizable to other hospital settings. It is hoped that the results of this study will help hospitals to better prepare nurses for STS and offer comprehensive assistance when they do experience STS.

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APPENDIX A

IRB #: IRB-FY22-23-373

Title: Secondary Traumatic Stress in Emergency Department Nurses: A Comparative Study

Creation Date: 10-2-2022

End Date:

Status: Approved

Principal Investigator: Diana Flory

Review Board: Research Ethics Office

Sponsor:

Study History

Submission Type Initial Review Type Exempt Decision Exempt

Key Study Contacts

Member Diana Flory Role Principal Investigator Contact [redacted]

Member Diana Flory Role Primary Contact Contact [redacted]

Member Kristy Ford Role Co-Principal Investigator Contact

APPENDIX B

Recruitment Email

Subject: Nursing Survey

Dear nursing staff:

As a graduate student in the School of Community Care and Counseling at Liberty University, I am conducting research as part of the requirements for a doctoral degree in partnership with Parkview Health. The purpose of my research is to assess rates of secondary traumatic stress, and I am writing to invite eligible participants to join my study. This research will result in publications that contribute to the advancement of nursing health and may help Parkview provide better supports to counter nursing burnout and turnover.

Participants must be 18 years of age or older and provide direct patient care in the Emergency Department, MICU, Labor and Delivery, or 7 Medical. Participants, if willing, will be asked to complete the Secondary Traumatic Stress Scale. It should take approximately 5 minutes to complete the survey. Participation will be anonymous, and no personal, identifying information will be collected.

You may participate in the survey electronically or by paper and pencil. To participate electronically, please click here https://forms.office.com/r/punGu0v9iH. If you would prefer to complete the survey physically, paper copies will be located at the nurses' stations on your unit. Please complete the survey and return it by placing it in the provided envelope. If you have questions, please contact me at [redacted].edu for more information.

A consent document is attached to this email for those who wish to participate electronically, and physical consent forms are attached to the paper and pencil surveys as well. The consent document contains additional information about my research. Participation is completely anonymous, so you do not need to sign and return the consent document. After you have read the consent form, please click the link to proceed to the survey. Doing so will indicate that you have read the consent information and would like to take part in the survey. Similarly, completing the physical survey indicates that you have read the consent information and would like to take part in the survey.

Sincerely,

Diana Flory
Graduate Student, Liberty University

APPENDIX C

Recruitment Follow-up

Subject: Nursing Survey Follow-up

Dear nursing staff:

As a graduate student in the School of Community Care and Counseling at Liberty University, I am conducting research as part of the requirements for a doctoral degree in partnership with Parkview Health. Two weeks ago, an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to complete the survey if you would like to participate and have not already done so. The deadline for participation is February 5.

Participants, if willing, will be asked to complete the Secondary Traumatic Stress Scale. It should take approximately 5 minutes to complete the survey. Participation will be anonymous, and no personal, identifying information will be collected.

You may participate in the survey electronically or by paper and pencil. To participate electronically, please click here https://forms.office.com/r/punGu0v9iH. If you would prefer to complete the survey physically, paper copies will be located at the nurses' stations on your unit. Please complete the survey and return it by placing it in the provided envelope. If you have questions, please contact me at [redacted] for more information.

A consent document is attached to this email for those who wish to participate electronically, and physical consent forms are attached to the paper and pencil surveys as well. The consent document contains additional information about my research. Participation is completely anonymous, so you do not need to sign and return the consent document. After you have read the consent form, please click the link to proceed to the survey. Doing so will indicate that you have read the consent information and would like to take part in the survey. Similarly, completing the physical survey indicates that you have read the consent information and would like to take part in the survey.

Sincerely,

Diana Flory
Graduate Student, Liberty University

APPENDIX D

Survey Consent

We are conducting a survey at Parkview Health System in partnership with researchers from Liberty University in order to assess secondary traumatic stress in nurses. Secondary traumatic stress can occur when working with patients who have suffered trauma or when working with their families. It is similar to post-traumatic stress disorder, with the difference that the trauma was not your own. We value your insights and opinions, and would like to learn about your experiences.

The survey is targeted at direct care nurses within the Parkview Health System. If you are a direct care nurse in the Emergency Department, MICU, Labor and Delivery, or 7 Medical, you are eligible to participate in this research study and to complete the survey.

Completion of this survey is voluntary. The survey responses are anonymous. If you decide to participate, you are free to withdraw at any time prior to submitting the survey. To participate electronically, please click here: https://forms.office.com/r/punGu0v9iH. By clicking the link, you give your consent to participate.

Thank you for taking the time to complete this survey so we may better understand the effects of secondary traumatic stress on nurses.

Diana Flory, Principal Investigator

APPENDIX E

Secondary Traumatic Stress Scale

The following is a list of statements made by persons who have been impacted by their work with traumatized patients. Read each statement, then indicate how frequently the statement was true for you in the past **seven (7) days** by marking the box under the corresponding number.

	0	1	2	3	4
	Never	Rarely	Occasionally	Often	Very Often
1. I felt emotionally numb.					
2. My heart started pounding when I thought about my work with patients.					
3. It seemed as if I was reliving the trauma(s) experienced by my patients.					
4. I had trouble sleeping.					
5. I felt discouraged about the future.					
6. Reminders of my work with patients upset me.					
7. I had little interest in being around others.					
8. I felt jumpy.					
9. I was less active than usual.					
10. I thought about my work with patients when I didn't intend to.					
11. I had trouble concentrating.					
12. I avoided people, places, or things that reminded me of my work with patients.					
13. I had disturbing dreams about my work with patients.					
14. I wanted to avoid working with some patients.					
15. I was easily annoyed.					
16. I expected something bad to happen.					
17. I noticed gaps in my memory about working with patients.					
Demographic Questions					
	Male	Female	Other		
Gender					
	0-2	3-8	9-15	16-20	21+
Years Nursing Experience					
	Day	Night	Both/Mix		
Shift					
	ED	MICU	Labor/Del	7 Med	
Unit					
	18-25	26-35	36-45	46-55	56+

Age					
	0	1	2	3	4+
How many traumatic situations have you witnessed in the past week?					

	Spouse/ partner	Other family	Work peers	Outside friends	Professional counseling
What type of support system do you lean on? (Mark all that apply)					