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Effect of Compassion Fatigue and Burn Out Education in the Nurse

Pamela Spendiff
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College of Nursing

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Pamela Spendiff

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Walden University

2022

Abstract

Effect of Compassion Fatigue and Burn Out Education in the Nurse

by

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MSN, Drexel University, 2013

BSN, The Richard Stockton College of New Jersey, 2007

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

Evolving changes in healthcare have caused increased levels of pressure on registered nurses (RNs) which increases compassion fatigue (CF), secondary traumatic stress (STS) and burnout (BO) and negatively affect compassion satisfaction (CS) which may affect a nurse's abilities and skills to provide quality care for patients and cause the RN to leave the profession. The mindfulness technique is one method which may help reduce CF, STS and BO in RNs. The purpose of this quasi-experimental study, guided by the compassion satisfaction and compassion fatigue model (CS-CF), was to determine what effect a mindfulness-based intervention (MBI) has on CF, BO and STS in RNS who work in an acute care facility, by years of experience, and by specialty areas. Participants were recruited via staff meetings/huddles from September 2020 to November 2021 when the final sample size was 70. Descriptive statistics and MANOVA was used to analyze the results. The results showed that MBI did not have a significant effect on the levels of CF, STS and BO, by specialty or by years of experience. Future studies could focus on the implementation of mindfulness techniques during the orientation phase of a nurses' introduction to the work environment and also during the precepting stage. The results added to the body of knowledge about the need for awareness of CF, STS and BO in nursing which may prevent RNs from leaving the profession which affects positive social change.

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Dedication

This project is dedicated to my family who has supported me in all my academic endeavors. To my nephew Karl-James, I am finally done with school.

Acknowledgments

I would like to thank my committee chair, Dr. Leslie Hussey for her assistance and guidance throughout this process. Without the support and patience of Dr. Hussey being my chairperson and guiding my steps, I would not have been able to complete my goal.

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Part 1: Overview

Introduction

Healthcare has become increasingly demanding regarding to the services provided by healthcare facilities to their patient population (McHugh et al., 2011; Medicare, 2013; Potter et al., 2010). The passage of health reform legislation in 2007 promoted an increased focus on the importance of patient satisfaction which leads to increased demands on the healthcare provider. Medicare incentives to healthcare organizations are partially based on patient' satisfaction measures (30%) that determines the amount of reimbursement that facilities may receive (Medicare, 2013). The increased demand for high quality care and patient satisfaction increases workloads on nurses, many nurses which may lead to burnout (BO) after exposure and suffering from compassion fatigue (CF) which may ultimately cause the nurse to leave the healthcare profession. CF refers to the emotional and physical exhaustion that can affect professionals and caregivers over time and has been associated with a gradual desensitization to patient stories and a decrease in quality care for patients and clients. CF has also been associated with an increase in clinical errors, higher rates of depression and anxiety disorders, and a rise in stress levels in the workplace climate. This increased rate of stress in the nurse has also been attributed to increased rates of stress in the household, divorce, and social isolation (Figley Institute, 2012).

The impact of healthcare providers leaving the healthcare profession has a detrimental effect not only on the nurse but also the patient, the healthcare facility, and on society as a whole as competent effective care may be jeopardized due to inexperienced healthcare providers providing care which may result in longer lengths of stay for the patient and decreased reimbursement for the healthcare facility (Cimiotti et al., 2012; Kaur et al., 2013; Martin, 2015; Rudman & Gustavsson, 2012; Sawatzky et al., 2015; Van Bogaert et al., 2014).

Feedback from a national survey that publicly presents patients' perspectives of their hospital care the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) on communication with patients regarding medications, discharge information, and whether the patient would recommend the facility to family or friends also highlights patient's satisfaction measures also highlighted the phenomena of CF on nurses and its effects on patient care. Data from the HCAHPS has also been used by researchers to study the effect of CF on a nurse's response to patient needs and their satisfaction level about the care given. The HCAHP survey results can indicate to hospital management teams the quality, effectiveness and standards of nursing care being given to the patients and low patient satisfactions scores that need to be addressed to promote a higher standard of care for the patient and a development of compassion satisfaction (CS) in the nurse (Sorra et al., 2012). By examining the phenomenon of CF and burnout in the nurse using past research on CF, burnout and providing effective

management and education of CF, the detrimental effects of CF and burnout that cause nurses to leave the nursing profession can be slowed or halted which would improve patient satisfaction and outcomes and create positive social change.

Background

The concept of CF was first identified by Joinson in 1992 who described CF as a type of BO specific to nurses who care for trauma patients, and Joinson suggested that nurses who were susceptible to CF needed to be better equipped to confront the stressors that contributed to the development of CF. Joinson stated that CF was due to a loss in the ability to “nurture” which could be contributed to multiple environmental stressors. The multiple environmental stressors included- increased workload, longer working hours, complex patient needs, which cause the nurse to feel tired, angry, depressed, ineffective, and apathetic and detached from the patients that they care for (Boyle, 2011). Figley (1995, p. 253) initially described CF as a person being in a state of exhaustion and dysfunction due to prolonged exposure to compassion stress and adopted a different concept to the definition of CF by adding the term secondary traumatic stress disorder (STSD). In 2002, Figley expanded his description of a person suffering from CF to that of being in a state of biological, physiological, and emotional exhaustion that results from cumulative exposure to the pain and suffering of others leading to the loss of ability to provide the same level of compassion and care to people in need of compassion and care.

Literature Review

The literature review was conducted using electronic databases from the Cochrane Library and Walden University Library, CINAHL, Medscape, Nursingworld.org, and Google Scholar, covering 1992-2019 years and included the key search terms *compassion fatigue*, *burnout*, *compassion satisfaction*, *compassion fatigue in nurses*, *secondary traumatic stress disorder*, *compassion satisfaction*. Additional search terms included: *patient satisfaction*, *nurse fatigue*, *emotional exhaustion*, *self-care*, *mindfulness techniques*, *education*, and *self-awareness*. The results of the search are synthesized below and include, compassion fatigue, burnout, depolarization, impact of healthcare providers leaving the healthcare profession, compassion satisfaction, current practices to reduce compassion fatigue in nurses.

Compassion Fatigue

CF is a cumulative state of frustration with a person's work environment that develops over a long time. A second component of CF is secondary traumatic stress (STS) and is described as being a feeling of despair in a person caused by the transfer of emotional distress from a victim to the caregiver and can develop suddenly in the nurse whilst caring for patients who are undergoing a traumatic experience due to: sepsis, organ failure, and other life threatening illnesses (Sacco et al., 2015; Stamm, 2010).

CF in the nurse was described by Coetzee and Klopper (2010) as the result of a progressive process when a nurse is exposed to continuous and intense contact with

patients. This contact causes the nurse to suffer from compassion stress which has an effect on the nurses' endurance levels that results in CF. The compassion energy expended by the nurse is manifested physically, socially, emotionally, spiritually and intellectually and increases in intensity as the nurse progresses through each stage of stress.

The demand for high quality care has caused patient and workplace situations that can lead to the development of negative, physical, psychological, emotional and spiritual changes in nurses and is associated with the phenomena of CF and work burn out (Austin et al., 2017; Coetzee & Klopper, 2010; Hegney et al., 2014; Kaur et al., 2013; Neville & Cole, 2013; Urban, 2017). CF may also manifest itself in detrimental forms that include secondary traumatic stress (STS), a state in which traumatic memories of patient suffering lead to negative psychological and physical changes in the nurse (Coetzee & Klopper, 2010; Figley, 1995, Stamm, 2010).

Work related signs and symptoms of CF include avoidance or dread of working with certain patients, a reduced ability to feel empathy towards patients and families, and lack of joyfulness. Emotional manifestations of CF include mood swings, restlessness, irritability, over sensitivity, anxiety, excessive use of substances such as alcohol, nicotine, and illicit drugs; depression, anger and resentment, loss of objectivity, memory issues, poor concentration, focus and judgement. Physical manifestations of CF include- headaches, digestive problems such as diarrhea, constipation, upset stomach; muscle

tension; sleep disturbances, inability to sleep, insomnia, too much sleep; fatigue; cardiac symptoms including chest pain/pressure, palpitations, and tachycardia (Figley, 1995; et al., 2004). These feelings may cause the nurse to leave the nursing profession due to continued exposure to stressful events related to working conditions and increased responsibilities which have a negative impact not only on the nurse, but also the patients for whom they provide care.

Burnout

The term “burnout” was first used in 1974 by the American psychologist Herbert Freudenberger. The term described the result of unyielding stress and high standards experienced by people working in healthcare. Pines and Aronson (1988) described BO as a state of physical, emotional, and mental exhaustion. A nurse suffering from BO may suffer from feelings of emotional exhaustion where the person feels exhaustion from the physical and emotional overload from interactions with coworkers and healthcare users. Wu et al. (2015) found cultural differences in levels of depression and or PTSD and /or their association to CF and BO. Results showed that oncology nurses in Canada and America had a difference in reporting depression, PTSD and its association to CF and BO due to the stigma associated in Canada with them reporting signs and symptoms of CF and BO. BO also may cause the nurse to feel a diminished sense of personal accomplishment. Reduced personal accomplishment causes the nurse to adopt a negative self-concept as a consequence of unrewarding situations such as overwork, high stress

and lack of managerial support (Weigl et al., 2016). From a long-term perspective, overwork and high stress levels can cause workers to suffer burnout (Tucker et al., 2012). BO was described as a consequence of disconnection between the high standards of care expected by patients, families and the facility that the nurse works for and the support the nurse receives from the employer. This culmination of stress factors results in a loss of coping ability in the nurse and ultimately results in BO (Todaro-Franceschi, 2013). The impact of BO causing healthcare providers to leave the healthcare profession has been examined by a number of researchers (Finzi-Dottan & Kormosh, 2016; Joinson, 1992; Sorenson, Bolick, Wright, & Hamilton, 2016), who recognized that the complex demands of an overburdened healthcare system has a detrimental effect on those providing care when the caregivers ability to nurture was affected due to increasing demands and workloads.

Depersonalization

Depersonalization is a component of BO where the nurse develops a negative, detached, cynical attitude to work, their co-workers and patients which may present in derogatory prejudices towards the patient and fellow workers (Maslach & Jackson, 1981, 1,b).

Depersonalization has been described by Maslach and Jackson (1981) as the development of cynical attitudes and negative responses toward fellow workers and the patients that the nurse cares for. It also causes extreme detachment from the job as the nurse becomes

more emotionally exhausted due to overextension due to increased workload and complex patient needs (Abhicharttibtra & Tungpunkom, 2019).

Wu et al. (2015) found cultural differences in levels of depression and or PTSD and /or their association to CF and BO. Results showed that oncology nurses in Canada and America had a difference in reporting depression, PTSD and its association to CF and BO due to the stigma associated in Canada with them reporting signs and symptoms of CF and BO.

Depersonalization has also been experienced by patients when nurses may be unable to focus on the patients' needs due to overwhelming increases in work tasks and documentation. This is often due to the nurse being under increased pressure to produce specific outcomes of care and demonstrate increased patient recovery rates from the care provided by a facility (Ballat & Campling, 2010).

CF and BO have been shown to have detrimental effects on a patient's health status and may result in longer hospital stays due to inadequate care being performed by nurses who have not been adequately trained in specialty areas (Cimiotti et al., 2012; Kaur et al., 2013; Martin, 2015; Rudman & Gustavsson, 2012; Sawatzky et al., 2015; Van Bogaert et al., 2014).

Impact of Healthcare Providers Leaving the Healthcare Profession

The impact of healthcare providers leaving the healthcare profession due to "burn out" not only impacts that person but also the patient, their family, the facility, fellow

healthcare workers, and the provision of healthcare (Finzi-Dottan & Kormosh, 2016; Joinson, 1992; Sorenson, et al., 2016). When staff leave, the subsequent reduction in staffing levels may lead to ineffective care which may cause further health complications to the patient. The national turnover rate for the bedside nurse was 19.2% in RNs over a five year period. The main reasons for leaving the profession included- salary, education, scheduling, commute/location, immediate manager interaction and workload/staffing ratios (Nursing Solutions, 2019). Behavioral health and emergency room nurses had a cumulative turnover rate of 112.4% and 101.1% over a five-year period which suggested that these two specialties had a full turnover of their entire RN staff during this period. Increased workload was found to cause increased turnover in staff which had a negative impact on the nurses, facility, and the patients due to new staff having to be trained and more experienced staff leaving due to BO (Aiken et al., 2012; Laschinger & Fida, 2014a; Melnyk et al., 2013).

When nurses leave the profession, there is a negative effect on the quality of care. Aiken et al. (2017) found that a greater proportion of professional nurses at the bedside was associated with better outcomes for patients and nurses. The study found that by having a higher proportion of nurses at the bedside, there was a significantly lower mortality, higher patient ratings of the care given and fewer adverse care outcomes. A reduction of nursing skill mix occurs when assistive personnel are added to the workplace without professional nursing qualifications. This decrease in nursing skills is related to patient

deaths, erosion of care quality, and contribute to nursing shortages due to higher onus of care being placed on the nurse to be accountable for the assistive personnel (Duffield et al., 2014). A reduction of healthcare providers leaving the healthcare field would have a positive impact on patient care as there would be adequate numbers of trained professionals to provide optimum, safe care to the patient population. CF has been shown to affect nurses not only on a personal level but on a physical level which causes an increase in sick days, a higher turnover rate, decreased productivity, changes in job performance, patient dissatisfaction, poor professional judgement which may lead to an increase in medication errors and performed patient care (Bride et al., 2007; Burtson & Stichler, 2010; Potter et al., 2010). As the nurse who is not fatigued or stressed will be able to identify deteriorations in a patient's condition, act accordingly, and prevent adverse care outcomes.

Compassion Satisfaction

Compassion satisfaction (CS) has been defined as the pleasure found in the work one performs through having a positive attitude about colleagues, contribution to the work environment, and patient care (Professional Quality of Life). CS was shown to be derived from the positive feelings a nurse felt from helping others through traumatic situations and the feeling of self-appreciation while caring for and helping others (Sacco et al., 2015; Zhang et al., 2018). Due to the changes in healthcare reimbursement, technology and increasing demands for a high standard of patient care, CS in the nurse may be

reduced causing high levels of CF and BO which has an effect on the quality of patient care and therefore, compromises patient satisfaction and nurse job satisfaction (Ko & Kiser-Larson, 2016).

Current Practices to Reduce Compassion Fatigue in Nurses

Current practices in reducing CF in the nurse have promoted education on compassion skills training in an effort to reduce a nurses' CF, secondary trauma (ST), and ultimate progression to BO. One of the education practices is that of mindfulness-based interventions (MBI's) where the nurse is taught how to identify what CF is, how to reduce levels of stress through MB interventions that enhance their self-compassion, a sense of calmness and having a positive attitude towards themselves, their patients and their colleagues to where the nurse can integrate these practices in their daily life (Neff & Germer, 2012; Richards et al., 2006). Mindfulness is an adaption of a Buddhist meditation practice that has been used by researchers to help nurses reach an inner state of calmness. By teaching self-compassion skills, the nurse will learn to enhance positive psychological health within themselves and reduce the risk of them developing BO and ultimately leaving the profession (Guillaumie et al., 2016).

For this study the following independent variables were utilized: demographic- gender (male/female), job status (work commitment: full or part time), race/ethnicity, education (highest education level), age in years, experience as an RN (years), setting (specialty practice area), time on unit (years), certification (professional). Systematic reviews on

CF have shown that higher levels of CF have been shown in nurses who are of a younger age (Berger et al., 2015; Nolte et al., 2017; Sinclair et al., 2017). In a conflicting study by Sacco et al., (2015), the researchers found that nurses aged 40-49 years had a higher incidence of BO than the younger nurses. Mangoulia et al. (2015) found that women had a significantly higher risk (1.2–8 times) for developing compassion fatigue than men.

The amount of education a nurse has, has been found to be a component of the level of CF they suffer from (Hunsaker et al., 2015; Wu et al., 2015.). The researchers found that nurses with more than a BSN qualification were more likely to have a higher compassion satisfaction level and a lower level of CF. Advanced practice nurses were found to have a lower level of CF. The amount of experience a nurse had showed that nurses who had a wealth of experience tended to have lower levels of secondary traumatic stress (Wu et al., 2015). Nurses who work in emergency, intensive care, oncology and nephrology have higher levels of BO than other clinical areas (82%) (Hinderer et al., 2014). Adult critical care nurses have been found to have the higher rate of depersonalization in nurses and pediatric and neonatal nurses were found to be at risk of emotional exhaustion which are all factors that lead to CF and BO (Rushton et al., 2015).

Wu et al. (2015) found cultural differences in levels of depression and or PTSD and /or their association to CF and BO. Results showed that oncology nurses in Canada and America had a difference in reporting depression, PTSD and its association to CF and BO due to the stigma associated in Canada with them reporting signs and symptoms of CF

and BO. These results were supported by Stuart et al. (2014) who found that many Canadians would stigmatize someone with depression. Many of the people in the study reported concern that employers would discriminate against them in the workforce if admissions of depression were made on an application. Respondents in the survey reported experiences of discrimination that were strongly associated with perceptions that Canadians would devalue someone with depression, and self-reported poor general mental health. The dependent variables are: compassion fatigue (CF), secondary traumatic stress (STS), burnout (BO), and compassion satisfaction (CS).

Theoretical Framework

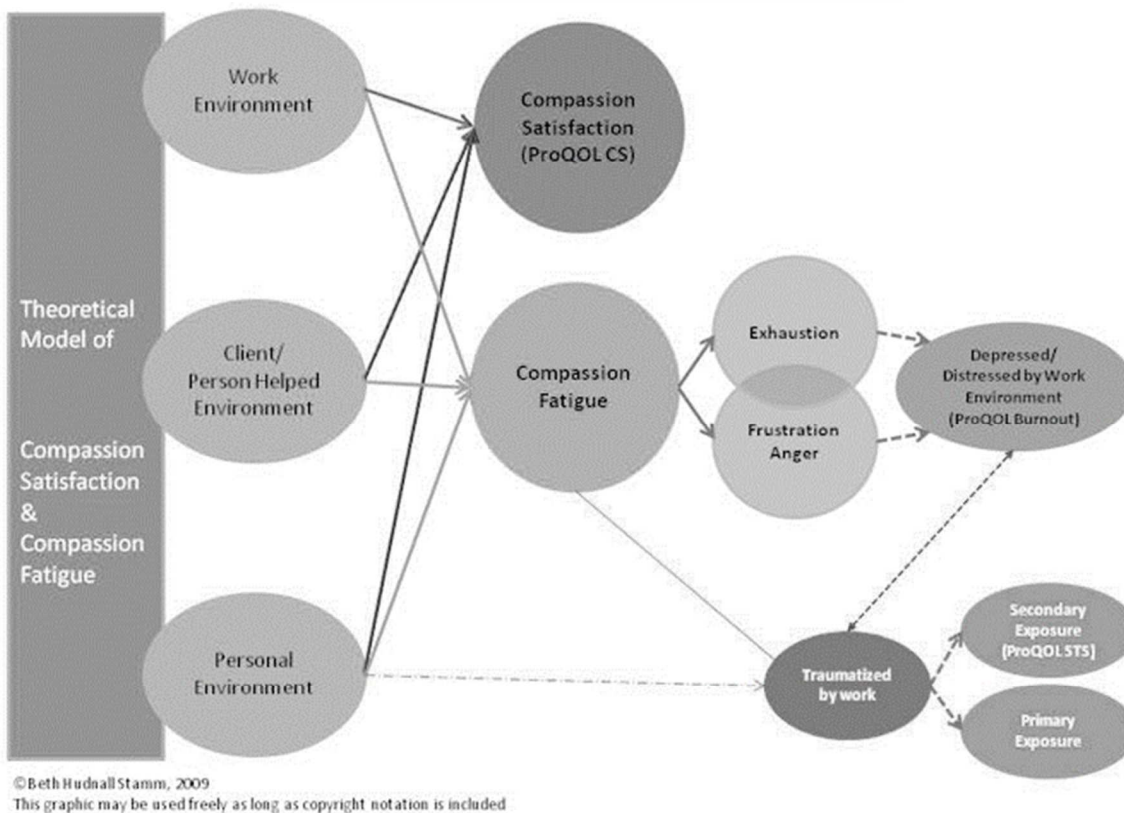
Figley (2002) recognized that CF may develop as a result of a caregiver's exposure to a patient's experiences which then joins with that caregiver's natural empathy and may cause distress to the caregiver. The CS-CF (Compassion Satisfaction- Compassion Fatigue) model shows a theoretical path analysis of the positive outcomes (CS) and negative outcomes (CF) a caregiver may encounter while helping patients who have experienced traumatic stress (Hunsake et al., 2015). Three specific environments are associated with the development of CF and CS: the work environment, client/persons helped environment and personal environment which cause both the positive and negative aspects of caring for others.

The ProQOL (Stamm, 2010) instrument does not contain a specific measurement for CF but addresses CF risk by assessing the three conceptual components that make up

compassion fatigue: burnout, secondary traumatic stress and loss of CS. The theoretical Model of Compassion Satisfaction and Compassion Fatigue shows how three environments in a person's life may feed into the positive and negative aspects of helping others. The environments are described by Stamm (2010) as being- the actual work situation itself, the environment of the person or people with whom that person is providing care or assistance and the personal environment that that person brings to work. Figure 1 illustrates the elements of Professional Quality of Life with the central components of CS and CF. CS is the positive aspects of helping others such as in the nursing profession, and CF as the negative aspects of caring for others. A nurse may work in a poor environment which causes CF but still derive CS that they are helping others despite the poor environment. Work-related trauma is described by Stamm (2010) as having a distinctive aspect of fear associated with it, which although being a rare complication experienced by the nurse, this is what develops into BO which can have a very powerful effect on a person. When BO and trauma are present in a nurse's life, life for that nurse can become very difficult and overwhelming. Figure 1 shown shows a theoretical path analysis proposed by Stamm (2009) of the positive and negative outcomes of helping those who have experienced traumatic stress.

Figure 1

Model of Compassion Satisfaction and Compassion Fatigue



From ProQOL Manual by B. Stamm, 2009, *The Concise Manual for the Professional Quality of Life Scale*, p. 11 <https://doi.org/proqol.org/proqol-manual>

In an effort to combat CF and its progression to BO and increase CS many interventions and strategies have been proposed by researchers. The interventions and strategies that the researchers have included stress reduction using yoga, mindfulness techniques, structured meditation, music therapy or a combination of these methods (Cocker & Joss, 2016; Gregory, 2015; Horner, et al., 2014; Duchemin, et al., 2015; Brooker, et al., 2012). Participants in these research studies have also been taught to build up their individual

resilience to stress through education programs. These education programs have also included interactive sessions that focus on promoting professional self-efficacy by improving the participants theoretical knowledge base of CF, its causes, and its progression to BO.

The variables studied by researchers in previous studies on CF, CS, and BO have included the following independent demographic variables- gender (male/female); job status (work commitment- full or part-time); race/ethnicity, education (highest education level); age in years; experience as an RN (years); setting (specialty practice area); time on the unit (years); and certification (professional). The dependent variables that have been studied included- CF; STS; BO and CS. Studies have shown that CF and BO are prevalent in many professions that include- nursing; EMS; social work; psychiatry; police; chaplains; mental health practitioners and in physicians (Cicognani, et al., 2009; Gleichgerrcht & Decety, 2014; Hegney, et al., 2014; Simon, et al., 2005; Yan & Beder, 2013; Zeidner, et al., 2013). However, in all of the studies reviewed, the research does not show which one method of education is most effective in reducing the amount of CF, STS, and BO. Results have shown a reduction of CF, STS and BO with increased levels of CS has helped with retention of nurses in the healthcare setting, but no specific education guidelines have emerged that may help healthcare providers to prevent and manage CF and BO in the healthcare setting. The series of studies proposed will examine (a) the effect of mindfulness education has a role on levels of CF and BO in registered

nurses, and (b) if years of experience and specialty areas where nurses work influence levels of CF and BO after mindfulness education. The studies will also determine whether mindfulness education on CF, STS, and BO will help raise levels of CS in the nurse which would help in preserving high standards of care for patients as the nurse has more knowledge in preventing their frustration levels increasing due to CF, STS and BO which can lead to lack luster care which may be detrimental to the patient population under the care of that nurse.

Overview of the Manuscripts

Due to the vast amount of information to be examined on the subject of CF in nurses, there is a need for the three related studies to sufficiently address how effective an education program using mindfulness techniques is on measuring the effect that the education has on reducing levels of CF and BO, the amount of experience or area of specialty a RN has will be effective in raising CS levels to prevent that nurse from leaving the healthcare profession due to CF and BO.

The purpose of this three-manuscript dissertation will be to interlink each of the variables being examined and may show that a shortened version of mindfulness training can reduce CF, STS and BO. The three manuscripts will be framed as a parallel study that will address research questions that work together to provide information about the effects of mindfulness education in reducing CF, STS and BO on nurses by specialty area and in years of experience. The manuscripts will also provide an insight into the

effectiveness of how a shortened educational session on mindfulness practice can have on elevating levels of CS in nurses working in an acute care facility and improve nurse retention rates in that facility.

Manuscript 1

To measure the effects of a mindfulness program on a nurse developing CF, STS and BO and raising levels of CS in the nurse, research is needed to identify if a shortened educational intervention program on mindfulness will have an effect of the levels of CF, STS, CS and burnout in registered nurses working in acute care. There is limited research on what length and the appropriate content of mindfulness training should have for it to be beneficial in reducing CF, STS, and BO in the nurse and in raising levels of CS in the nurse. By investigating the effectiveness of a short educational session on mindfulness, future challenges in addressing CF, STS, and BO in the nurse may help to prevent nurses from leaving the nursing profession and to maintain nurse retention in acute care facilities.

Research Question

RQ1: What effect does an educational intervention on mindfulness have on the level of CF, STS, CS and burnout in registered nurses who work in an acute care facility?

Nature of the Study and Design

I will use a quantitative, quasi-experimental design approach. The study will be a one group pretest, posttest, study conducted using a group of registered nurses in an acute

care facility, and will be guided by the Compassion Satisfaction and Compassion Fatigue Model ([CS-CF]; Stamm, 2010).

Possible Types and Sources of Data

Quantitative data will be collected with the use of the ProQOL instrument Version

Manuscript 2

The demographic factor of years of experience in nurses and the effect of CF, STS and BO has been investigated by many researchers (Hunsaker & Maughan, 2014; Kolthoff & Hickman, 2017). The research has shown that the more experience a registered nurse has, the less they suffer from CF, STS and BO, and that they have higher levels of CS. There is limited research on whether mindfulness training will be beneficial in reducing levels of CF, STS, and BO in the experienced nurse and in raising levels of CS in that nurse.

Mindfulness practice in the nurse has become an increasingly popular practice instituted by health care institutions to support their staff (Barratt, 2016). Two studies performed by Penque (2009) and Palmer (2010) found that mindfulness training increased a nurses' clinical empathy. By investigating the effectiveness of a short educational session on mindfulness, this manuscript will provide information on the validity of mindfulness training in the experienced nurse and whether that experienced nurse will be able to provide effective compassionate care to patients due to a lower levels of CF, STS and BO (Anderson, 2020; Kaplan Serin et al., 2020).

Research Question

RQ 2: What effect does an educational intervention on CF, STS, CS and burnout have on nurses by years of experience who work in an acute care facility?

Nature of the Study and Design

I will use a quantitative, quasi-experimental design approach. The study will be a one group pre-test, post-test, study conducted using a group of registered nurses in an acute care facility, and will be guided by the Compassion Satisfaction and Compassion Fatigue Model ([CS-CF]; Stamm, 2010). I will include a demographic questionnaire that asks for years of experience.

Possible Types and Sources of Data

Quantitative data will be collected with the use of the ProQOL instrument Version

Manuscript 3

Research has shown that registered nurses who work in different specialty areas in healthcare have varying levels of CF, STS and BO and CS (Kolthoff & Hickman, 2017; Yu, Jiang, & Shen, 2016). Mindfulness intervention education has been investigated by many researchers who have described different methods and lengths of mindfulness programs (Cocker & Joss, 2016; Penque, 2019). However, an education intervention on mindfulness should be and what content is appropriate little is known about how long for the registered nurse working in different specialty areas in an acute care hospital. By investigating the effectiveness of a brief mindfulness intervention where the registered

nurse is taught how to carry out 5 minute mindfulness exercises to reduce CF on registered nurses in different specialty areas in an acute care hospital, this research study will give an insight on the appropriateness of the brief mindfulness intervention and provide a platform for educators to build upon to provide effective interventions to prevent CF, STS and BO.

Research Question

What effect does an educational intervention on CF, STS and burnout have on CS in registered nurses who work in different specialty areas in an acute care facility?

Nature of the Study and Design

I will use a quantitative, quasi-experimental design approach. The study will be a one group pre- test, post- test, study conducted using a group of registered nurses in an acute care facility, and will be guided by the Compassion Satisfaction and Compassion Fatigue Model (CS-CF) (Stamm, 2010).

Possible Types and Sources of Data

Quantitative data will be collected with the use of the ProQOL instrument 5.

Significance

Reducing or controlling CF and burnout is crucial. By educating nurses on how to develop coping strategies to mitigate CF and its advancement to burnout may help reduce the number of nurses leaving their positions due to CF or ultimately leaving the profession due to burnout (Connor, 2006). The purpose of these studies is to investigate

whether the Mindfulness technique can affect levels of CF, STS, and BO in nurses. If the Mindfulness technique is effective, CF, STS, and BO can be reduced to help reduce or prevent nurses leaving the healthcare profession which could have a positive effect on the care and health status of patients. This project is unique as it addresses an under researched area in nursing provider education as the literature has only a few studies that address the use of Mindfulness techniques to reduce CF in the healthcare professional and increasing compassion satisfaction (CS) in the nurse (Simon, et al., 2005).

An increase in CS through activities that help nurses reinvigorate or renew their passion for caring for patients and reconnect the nurse to their initial purpose/role, provide energy to the nurse to prevent or reverse CF and promote CS (Perry, 2008). If the nurse has an awareness of CF, that nurse may be more able to promote self-renewal, and health promotion activities that promote CS. An increased level of CS may prevent the development of burn out (Potter, et al, 2013; Romano, et al 2013). The results of this study will provide needed insights on how education on CF in the healthcare profession may reduce BO in the nurse and prevent an increase in CF due to lower staffing levels, increased workload and increased demands for patient satisfaction. A reduction of healthcare providers leaving the healthcare field would result in a positive social change and have a positive impact on patient care as there would be adequate numbers of trained professionals to provide optimum, safe care to the patient population.

Summary

CF is a problem that has been researched over the years by many researchers for all groups of those giving care to others. In nurses, the research has shown that CF, STS and its development into BO can cause nurses to leave the healthcare profession which has an impact on the quality of care given to patients. There have been many studies that have proposed different educational techniques to combat the development of CF, STS and reduce BO. The Mindfulness technique is one method proposed by many researchers which has had promising results in reducing CF, STS and BO in the professionals giving care to others. These research studies will investigate whether teaching the Mindfulness technique to nurses in an acute care facility will have an effect on increasing their awareness of CF, STS and its progression to BO, but also to methods that can increase CS in the nurse and hopefully prevent that nurse from leaving the healthcare profession. There is need for continued research on CF, STS, and BO as there are continuing changes and increasing demands in the world of healthcare which may cause CF, STS, and BO in nurses which may be detrimental not only to the nurse but the patients and families under their care. By educating the nurse to recognize the symptoms of CF, STS and by increasing their level of CS, the progression to BO can be prevented which will help retain an experienced and knowledgeable nurse who is able to provide optimum care to the patients entrusted to their care.

From the research studies reviewed, it is evident that CF, STS, and its development to BO is an ongoing problem in the world of nursing. The need for further research to evaluate whether an education program on Mindfulness techniques will reduce CF, STS and reduce the progression to BO is essential to not only raise CS in the nurse but also for the patient population under the care of that nurse so that optimum care is provided for the patient in their time of medical need. The research studies proposed will enable nurses to practice in an informed and knowledgeable manner that not only benefit their own mindset and raise their own CS levels regarding the care that they provide for their patients but also for development of mindfulness about their own vulnerabilities as a caregiver but also as a person. Part 2 presents, in detail, each unique manuscripts' problem, evidence, and research methodology highlighting the significance and importance of each nursing-related topic.

Part 2 Manuscripts

Effect of Educational Intervention on Compassion Fatigue and Burnout on Nurses'

Retention

Pamela Spendiff

Walden University

Outlet for Manuscript

Clinical Nursing Research: is a refereed journal publishing research articles that focus on nursing practice. It disseminates research findings of particular interest to practicing nurses, provides an international forum for discussion among clinical nurse researchers and by identifying practical applications of research, enhances practice. Manuscripts of interest to *CNR* are those that focus on assessment and/or measures of intervention effectiveness for application in practice settings. *CNR* does not publish research on nurses. This journal is a member of the Committee on Publication Ethics (COPE).

This Journal recommends that authors follow the [Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals](#) formulated by the International Committee of Medical Journal Editors (ICMJE).

Submission requirements for this journal:

General Guidelines

General Instructions: All portions of the manuscript, including the abstract, notes, quotations, appendixes, tables, and reference list, must be typed double-spaced and left-justified (ragged right margins), with minimum one-inch margins. Number all pages, including the title page and reference list. Include the title on the first page of the text. As this is a refereed journal, authors' names must not appear anywhere in the manuscript other than on the title page. Treat acknowledgements as footnotes and include them on a separate page entitled "Notes" at the end of the manuscript.

Manuscript Length: The text for a research article should be approximately 6,200 words; the manuscript should not exceed 24 pages, including references. Research briefs and replication studies are limited to 12 manuscript pages.

Title Page: A separate title page must include the title (in not more than eight words), the authors' names, titles, current addresses (including postal or zip code) and telephone and FAX numbers, and their affiliations as they should appear in print. Provide three to five key words for indexing purposes.

Abstract: The abstract should be a single paragraph summary of the manuscript typed on a separate page. It should be concise (not more than 150 words) and complete in itself.

Include the study's purpose, methodology, major results, and application if appropriate.

Style: Refer to the Publication Manual of the American Psychological Association (APA Style Manual 6th Edition), and pay particular attention to the sections on sexist language and reference style. All references documented in the reference section must be cited in the text; similarly, all text citations must appear in the reference list.

Copyright and Releases: Include a typed cover letter with your submission, which states that the author(s) is submitting the manuscript to *Clinical Nursing Research* exclusively.

Authors submitting manuscripts do so with the understanding that, if the paper is accepted for publication, copyright belongs to the publisher. The senior author will be required to sign a Journal Contributor Publishing Agreement form when the manuscript is accepted for publication.

Tables and Figures: All figures and those tables with 17 or more columns must be camera-ready. Submit black and white photographs of your figures, or original line drawings. Group tables and figures at the end of the manuscript; do not embed them within the text itself, and do not include more than one table on each page. Limit the total number of tables and figures to four.

Permissions: Include proof of written permission for all quotations which require permission or exceed 300 words in length, and for all tables and figures from sources for which the author does not hold the copyright.

Submission: submit your manuscript to the SAGE Track website at <http://mc.manuscriptcentral.com/cnr>.

As this manuscript series will investigate and promote Mindfulness education in nurses to reduce or prevent compassion fatigue (CF), secondary traumatic stress (STS) and burn out (BO), the research topic aligns with the journals mission of disseminating information to practicing nurses internationally.

Information about the journal can be accessed: <https://us.sagepub.com/en-us/nam/clinical-nursing-research/journal>

Abstract

This study investigated the effects of a mindfulness based intervention (MBI) session on the levels of compassion fatigue (CF), burnout (BO), secondary traumatic stress (STS) and compassion satisfaction (CS) in ($n = 70$) nurses in an acute care facility, using the ProQOL version 5 assessment tool for compassion fatigue. Data analysis was conducted with a MANOVA using SPSS, version 27. The differences between pre and post-scores on the combined dependent variables of compassion satisfaction, burnout, and secondary trauma were not statistically significant, $F(3, 67) = 1.232, p = .305$; Wilks' $\Lambda = .948$.

Results revealed that the education session on mindfulness had no effect on the levels of CF, STS, BO and CS in the nurses who worked in the acute care facility ($p = .305$). Ages ranged from 18 to 70 years with most people between the ages of 51-60, 21 (30.0%).

Most nurses were White, 52 (74.3%) and had between 21 and 30 years of experience, 23 (32.9%). The highest education level was a Bachelor's degree 36 (51.4%). Thirty-one (44.3%) of the RNs worked in Medicine/Surgical/Oncology and Radiology. The education session on mindfulness had no effect on the levels of CF, STS, BO and CS in the nurses who worked in the acute care facility. The results need to be investigated in future research studies to empower nurses to recognize the effects of CF, STS and BO to prevent the potential detrimental effects it may have on the patient population when nurses leave the healthcare profession.

Introduction

Caring for patients in the acute care hospital setting exposes nurses to many daily challenges that may negatively affect efficient, cost effective and competent care that meets patient's needs. Nurses care for patients with various types of pain, suffering, and care demands, which effect nurses physically and physiologically (Dugani et al; 2018; Ruiz-Fernandez, et al., 2020). Exposure to the suffering of others can result in a nurse developing compassion fatigue (CF). Compassion fatigue was described by Coetzee and Klopper (2010) as the emotional, physical, social, intellectual, and spiritual changes that occur with nurses' progressive exposure to stress and patient-interactions. Compassion fatigue is also defined as a disorder in which a nurse or other caregiver demonstrates feelings of fatigue, lack of empathy, and an accompanied depressed mood in relationship to work (Alharbi et al., 2019; Stamm, 2002). CF refers to the emotional and physical exhaustion that can affect professionals and caregivers over time and has been associated with a gradual desensitization to patient stories and a decrease in quality care for patients and clients. CF is associated with an increase in clinical errors, higher rates of depression and anxiety disorders, and a rise in stress levels in the workplace climate. Increased stress levels in the nurse are linked to increased rates of stress in the household, divorce, and social isolation (Figley Institute, 2012; Gustafsson et al., 2021).

Secondary traumatic stress (STS) is a specific type of compassion fatigue that occurs as nurses are exposed to others' suffering or traumatic events (Coetzee & Klopper, 2010)

may lead towards burnout (BO) (Joinson, 1992; Jun et al., 2020; Stamm, 2010). Burnout is 'associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively' (Stamm [2010](#):13). Stamm (2010) further defined burnout as being a syndrome composed of emotional exhaustion, depersonalization, and reduction of personal accomplishments.'

Researchers have shown that the experienced nurse leaves the profession due to several factors that include higher patient acuity, increased workload demands, ineffective working relationships among nurses and physicians, gaps in leadership support, all of which contribute to high stress. High stress has been linked to feelings of dissatisfaction in the experienced nurse which leads to the nurse feeling ill equipped to perform their job which leads to CF, STS and BO and may cause the nurse to leave the workplace (Kelly, 2020; Labrague, 2020). When experienced nurses leave the workplace, less experienced nurses are exposed to situations that they have not previously encountered and may result in inadequate care that may have detrimental outcomes for the patients under their care. Inexperienced nurses have been shown to have difficulties in recognizing sepsis, deteriorations in a patient's status, and deficits in utilizing critical thinking skills that the experienced nurse has had time to develop which could have significant health consequences for the patient if not caught early in a health crisis (Harley et al., 2019).

Literature Search

I conducted a literature search using electronic databases and search engines accessible from the Cochrane Library and Walden University Library, CINAHL, Medscape, Nursingworld.org, and Google Scholar. Other sources included online e-books, hand-picked articles, and peer-reviewed journals. The information included in this research was derived from research studies that were conducted between 1992-2019. Key search terms included: *compassion fatigue*, *compassion fatigue in nurses*, *secondary traumatic stress disorder*, *compassion satisfaction*, and *burnout*. Additional search terms included: *patient satisfaction*, *nurse fatigue*, *emotional exhaustion*, *self-care*, *mindfulness techniques*, *education*, and *self-awareness*. The results of the research are synthesized below and include, compassion fatigue, burnout, depersonalization, the impact of health care providers leaving the healthcare profession, compassion satisfaction, and current practices to reduce CF in nurses.

Significance or Importance

Health care facilities need to retain experienced nursing staff for quality nursing care and improved patient outcomes (Mason, et al, 2014; Owens, et al., 2020). Retaining nurses is crucial so that quality health care can be provided to patients and their families (Mbemba et al., 2013).

Years of experience in nurses and the effect of CF, STS and BO has been investigated (Cavanagh et al., 2019; Hunsaker & Maughan, 2014; Kolthoff & Hickman, 2017).

Results of research studies have shown conflicting results on the levels of CF, STS, and BO the experienced nurse report. Rushton et al. (2015) reported that nurses working in different areas of nursing such as oncology, pediatrics, ED and the ICU had varying levels of emotional disengagement and depersonalization in their work due to different the severity of illness, workload and management demands. The amount of emotional disengagement and depersonalization the nurse reported in different specialties of nursing influences the level of CF, STS and BO. Other findings have shown that the more experience a registered nurse has, the less they suffer from CF, STS and BO, and that they have higher levels of CS (Kaplan Serin et al., 2020; Potter et al., 2015;).

Many hospitals are turning to mindfulness interventions to increase patient satisfaction by addressing staff stress levels (Praisman, 2008; Suleiman-Martos et al, 2020). In a pilot study, Horner et al. (2014) found that when staff were introduced to a 10 week mindfulness training program, nurses' reported improvement in levels of burnout and stress and patient satisfaction levels. However, there is limited research on whether mindfulness training will be beneficial in reducing levels of CF, STS, and BO and raising levels of CS in the experienced nurse.

Mindfulness practice allows for the nurse to take a step back, and recognize what is important at that specific time, and to develop a sense of equanimity which allows the nurse to have mental calmness, composure in a high stress situation with a critically ill patient (Sarazine et al, 2021; Young, 2013). This allows nurses to stabilize their

focus/attention and engage with the patient while accurately assessing patient needs while providing a high quality of care and compassionate efficient care for the patient which increases CS in the nurse and satisfaction for the patient for the care that they receive (Barratt, 2017). Increasing CS in the nurse allows for increased motivation for organizational change by the nurse which allows for progressive and quality nursing care for the patient (Leonard, 2016). Mindfulness training allows the nurse to cultivate compassion for themselves which fosters a compassionate nature towards the patient, their co-workers and collaboration between health care professionals which promotes patient focused care (Barratt, 2017). By fostering a positive work environment through mindfulness practice, the health care facility benefits from higher Press Ganey (n.d.) scores for patient satisfaction and reimbursement for the care provided to their patients (retrieved from performance/nursing-quality-ndnqi). This, in turn, effects positive social change and fosters a sense of community between the health care facility and the community because patients r develop a sense of trust with that facility which is indicated by high patient satisfaction scores. .

Theoretical Framework.

Figley (2002) recognized that CF may develop because of a caregiver's exposure to a patient's experiences which then joins with that caregiver's natural empathy and may cause distress to the caregiver. The compassion satisfaction- compassion fatigue (CS-CF) model shows a theoretical path analysis of the positive outcomes (CS) and negative

outcomes (CF) a caregiver may encounter while helping patients who have experienced traumatic stress (Hunsake et al., 2015). Three specific environments are associated with the development of CF and CS: the work environment, client/persons helped environment and personal environment which cause both the positive and negative aspects of caring for others.

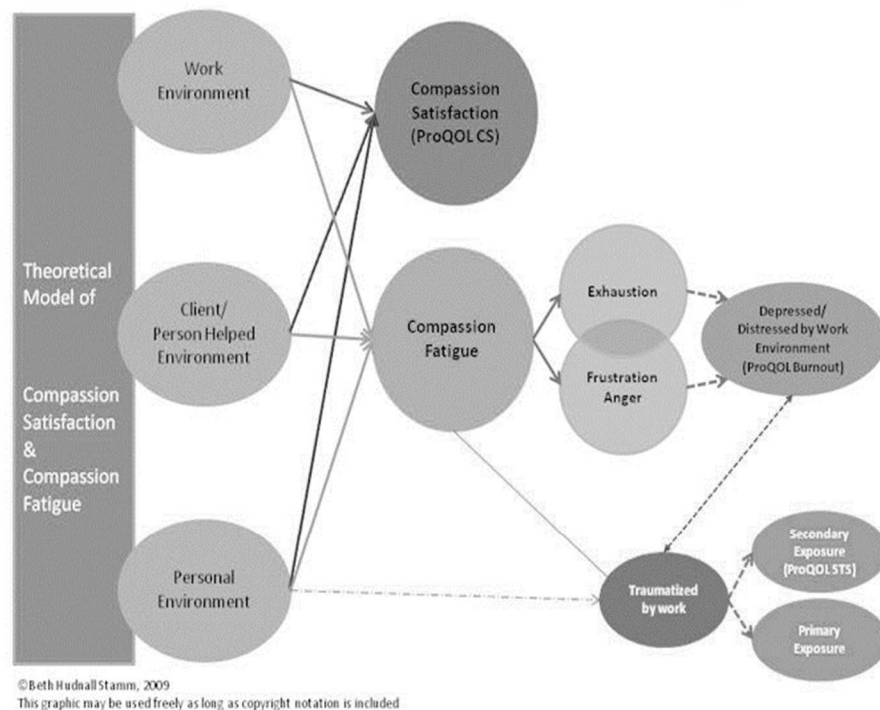
The theoretical model of CS and CF was designed by Stamm (2010) to show how three environments in a person's life are connected to the positive and negative aspects of helping others. The environments are described as being- the actual work situation itself, the environment of the person or people with whom that person is providing care or assistance and the personal environment that that person brings to work.

Figure 1 illustrates the elements of professional quality of life with the central components of CS and CF. CS is the positive aspect of helping others such as in the nursing profession, and CF is the negative aspect of caring for others. This is a consequence of caring for others and being exposed to increasingly sicker patients, increased work demands and traumatic situations where the nurse is exposed to the pain, suffering and even the death of a patient. A nurse may work in a poor environment which causes CF but still derive CS that they are helping others despite the poor environment. Work-related trauma is described by Stamm (2010) as having a distinctive aspect of fear associated with it, which although being a rare complication experienced by the nurse, is what develops into BO which can have a very powerful effect on a person. When BO and

trauma are present in a nurse's life, life can become very difficult and overwhelming not only in their work environment but also their home life. The nurse may experience feelings of dread about work, have mental and physical exhaustion, sleep issues, and depression which may cause nurses to disengage from the patients they care for and from their own family. Nurses who are suffering from BO may be less motivated and may experience lower cognitive functioning due to emotional exhaustion which could put patients at risk of urinary tract infections, falls and surgical site infections (Cimmotti, et al, 2012; Steinheiser., et al, 2020).

Manuscript 1 Figure 1

Model of Compassion Satisfaction and Compassion Fatigue



From ProQOL Manual by B. Stamm, 2009, *The Concise Manual for the Professional Quality of Life Scale*, p. 11 <https://doi.org/proqol.org/proqol-manual>

My research study can make a positive contribution to the ongoing research on CF, STS, CS and BO as it will provide information to nurse educators, nurse managers and nurses about the effect of how a mindfulness session could reduce CF, STS and its development into BO and raise CS. I investigated whether teaching the mindfulness technique to experienced nurses in an acute care facility had an effect on increasing awareness of STS and its progression to BO, and methods that can increase CS.

Relevant Scholarship

Research has shown that many nurses experience CF, BO and STS in their everyday work environment and that this can have an effect on nurse retention and patient safety (Wijdenes, et al., 2019;). Labrague and de los Santos (2021), found that fear of COVID-19 had an effect on nurses causing psychological distress, decrease in work satisfaction and an increased intent to leave. The study found that by fostering resilience in nurses by addressing fears of covid resulted in improved job outcomes, increased job satisfaction, lowered stress and intent to leave (Labrague & de los Santos, 2021).

Mindfulness-based interventions have a beneficial and holistic effect on the body, brain, mind, emotions and behavior of a person. Mindfulness is described as being an efficacious intervention to reduce stress and improve overall health and well-being (Saban; et al., 2020). By practicing mindfulness, a person encounters increased self-

awareness of their thoughts, emotions, and experience. The keys to mindfulness practice involve the person observing, noticing, and accepting a situation rather than reacting with evaluation judgment to that situation at that time. The practitioner is encouraged to pay attention to the present moment, be aware of their breathing, and observe what is happening both externally and internally. This allows the practitioner to reorient themselves, adopt a reflective stance on how to work through the situation and suspend judgement about the situation they are facing. Saban et al. (2021) found that MBI for 48 nurses who had a patient load of 20 patients each increased patient satisfaction and the nurses state of mindfulness.

Mindfulness-based cognitive behavioral therapy (MBCT) is a component of mindfulness intervention education. MBCT training allows a person to train their mind to bring attention and awareness to the present. By incorporating this technique, nurses can turn their attentional resources to the immediate experience rather than ruminating on previous anxiety-saturated experiences (Mealer et al., 2020). This is important for the nurse to evaluate a situation that is causing them stress and use adaptive techniques to reduce the level of stress in that situation and allows for the levels of psychological and physiological effects that stress has on a person's psycho-neuroendocrine/immune and autonomic nervous system to be decreased so they can more effectively handle the situation that is causing stress (Alharbi et al., 2020).

Mindfulness intervention research has shown positive outcomes in modulating the stress response in people through reduction in anxiety and depression levels and an improved coping ability (An et al., 2020; Jun et al., 2020). Because of the effects of mindfulness interventions, there has been a growing interest in what it is and how it can be applied in healthcare. Suleiman-Martos et al. (2020), performed a meta analysis of 17 articles that showed mindfulness training reduced levels of BO, scores of emotional exhaustion and depersonalization and raised personal accomplishment scores. Kang et al. (2021) performed a meta-analysis of 370 studies that compared the use of MBI's and the mental health status of nurses. The study found that MBI's decreased psychological distress, increased psychological wellbeing and quality of life. By educating the experienced nurse how to recognize the symptoms of CF, STS, and BO with mindfulness, nurses; levels of psychological and physiological levels may not reach a level of BO which may cause them to leave the profession.

Research Question

RQ1: What effect does an educational intervention on mindfulness have on the level of CF, STS, CS and BO in RNs who work in an acute care facility?

H_0 1: There will be no effect on the level of CF, STS, CS and burnout in registered nurses who work in an acute care facility who will experience an educational intervention on mindfulness.

H_{a1} : There will be an effect on the level of CF, STS, CS, and burnout in registered nurses who work in an acute care facility who will experience an educational intervention on mindfulness.

Nature of the Study and Design

I conducted a quantitative, quasi-experimental one group pretest, posttest design using six groups of registered nurses categorized by years of experience in an acute care facility and was guided by the CS-CF Model (Stamm, 2010). The independent variable was an educational session on mindfulness. The dependent variables studied were CF, STS, and BO. Demographic data that included: gender (male/female); job status (work commitment- full or part-time); race/ethnicity, education (highest education level); age in years; experience as an RN (years); setting (specialty practice area); time on the unit (years); and certification (professional) was used as an identifying measure (see Appendix D). The results from this study may assist nurses to develop an understanding of mindfulness techniques to reduce CF, STS, BO and raise CS levels which in turn will increase job satisfaction and improve nurse retention and patient safety.

Methods

Population

The target population were experienced registered nurses (RNs) who worked in different areas of nursing that provide patient care in an acute care facility. A minimum of one years' experience as a bedside nurse was required to participate.

Sample and Power

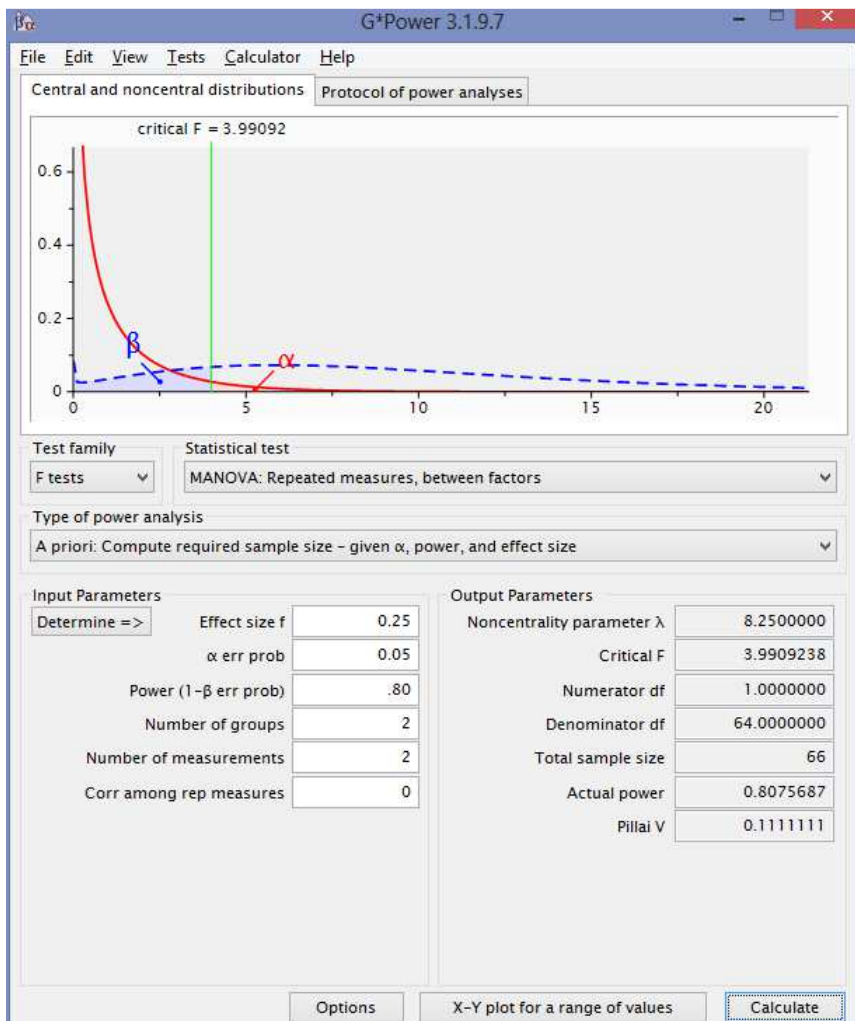
A non-probability, convenience sample was used. The inclusion criteria were 1) a registered nurse who worked at least 36 hours per week in the facility, 2) interacted daily with patients for at least 36 hours per week, and 3) had at least one year experience as a bedside nurse. The rationale for including a minimum of at least one year's experience as a nurse and working 36 hours per week at the bedside was that the nurses participating in the study would have had experience in patient care and would have been exposed to enough traumatic events that contribute to the development of CF, STS and BO.

A priori power analysis was conducted using G*Power to determine the required minimum sample size for the study (Faul et al., 2009). Four factors were considered in the power analysis: significance level, effect size, the power of the test, and statistical technique. The significance level, also known as Type I error, refers to the chance of rejecting a null hypothesis given that it is true (Haas, 2012). Most quantitative studies make use of a 95% confidence level because it adequately provides enough statistical evidence of a test (Creswell & Poth, 2017). The effect size refers to the estimated measurement of the relationship between the variables being considered (Cohen, 1988). Cohen (1988) categorizes effect size into small, medium, and large. Berger, Bayarri, and Pericchi (2013) purported that a medium effect size is better as it strikes a balance between being too strict (small) and too lenient (large). The power of test refers to the probability of correctly rejecting a null hypothesis (Sullivan & Feinn, 2012). In most

quantitative studies, an 80% power is usually used (Sullivan, & Feinn, 2012). The statistical test used for this study was repeated measures, between factors MANOVA. In order to conduct MANOVA to detect a medium effect size, at 5% level of significance, with 80% power, at least 66 participants were required (Figure 2).

Manuscript 1 Figure 2

*G*Power Sample Size Calculation for MANOVA*



Variables and Sources of Data

I recruited RNs who worked in a rural community hospital. Permission to conduct the research study was obtained from the hospital's IRB and Walden IRB (09-04-20-0618315). Prospective participants were invited to attend the education session via an email (Appendix C) NS via staff meetings/huddles. Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education.

Quantitative data on the variables of CF, STS, BO and CS were collected through pre- and post- surveys from registered nurses in the acute care facility. The purpose and significance of the study, how the data would be used and a disclaimer that participation in the study was voluntary was sent to the registered nurses via an email (See Appendices C and D).

The demographic information included: gender (male/female), job status (work commitment: full or part time), race/ethnicity, education (highest education level), age in years, experience as an RN (years), setting (specialty practice area), time on unit (years), certification (professional) (see Appendix F,).

Data were stored on a password protected laptop, with a backup stored to a password protected cloud server, Microsoft OneDrive. Confidentiality and anonymity were maintained for all study participants. I keep the data secure using a password protected computer which will be backed up on a password-protected hard drive. I am the only one who knows the password.

Instrumentation

Data were collected using the ProQOL Version 5 to measure the level of CF, STS, BO and CS. Permission to use Stamm's scale was obtained via standard permissions on the ProQOL website (Permission to Use ProQOL, 2019, Appendix B). The ProQOL 5 consists of three subscales that are used to measure compassion satisfaction and compassion fatigue. Two of the subscales: burnout and secondary traumatic stress are components used to measure CF. The third subscale is compassion satisfaction. The ProQOL 5 is a 30-item self-report scale that uses a 5-point Likert scale scoring from 1= *never* to 5= *very often* (Stamm, 2010). This scale is the most commonly used scale to measure the negative and positive effects of helping patients who have experienced suffering and trauma and the effects the patient's experiences have on nurses which may lead to CF and CS. Using the ProQOL 5 assessment tool, allowed characterization of the levels of CS, BO and CF among participants and to compare nursing specialty, gender, and other personal/professional demographic factors (see Appendix A). The ProQOL scale has been extensively tested over many years, and has demonstrated reliability through α subscale reliabilities, respectively, of 0.80 for compassion fatigue, 0.87 for compassion satisfaction, and 0.72 for burnout (Stamm, 2010). The ProQOL scale has been tested for validity using the Rasch analysis procedure on each of the three subscales. Rasch measurement places importance on whether the data collected from an instrument's items provides the researcher with an invariant representation of an

underlying ability of trait of interest (CF, STS, BO and CS). Rasch analysis transforms ordinal data into linear measures with equal-interval units called logits which are used to describe the measures of both individuals and items (Boone, et al., 2014). Rasch analysis allows for comparison of a person to other individuals using the items in the measurement scale (Peixoto Souza et al., 2017).

Design and Analysis

The design used for this research study was a quantitative, quasi-experimental one group pre- test, post- test design. The session was an educational program on mindfulness produced by the facility and was delivered through the Netlearning system that the facility used for education. Mindfulness techniques can decrease CF, STS, BO and increase CS levels in RN's who work in acute care facilities. The dependent variables pre and post session were measured using the ProQOL Version 5 survey which uses a Likert 5 point scale. The use of a 5 or 7 point scale like the Likert scale allows the researcher less chance of departing from intervalness (where there is a departure from the assumption of normal distribution due to fewer numbers of points on the scale) which could have an effect of a Type I or Type II error occurring (Schrum; et al 2020; Simon & Goes, 2013). Using this method if the average post-test score is better than the average pre-test score, the researcher can conclude that the session (education session on mindfulness techniques) may be responsible for the improvement (Van der Reit, et al. , 2018).

The plan for data analysis was to use a paired samples t -test in Statistical Package for Social Sciences (SPSS Version 27) to determine if the educational session would affect the level of CF, STS, BO and CS in a group of RNs in the acute care facility. The pre and post-test questionnaires were matched using unique identifiers. However, when the research questions were reviewed, I used MANOVA to analyze the data because I had more than one dependent variable. Data were screened for missing and outlier responses and included a review of all demographic information. Descriptive statistics were calculated for all variables.

Results

Execution

Recruitment and Data Collection

The target population of the study was RN's who worked in all areas of nursing that provided patient care in an acute care facility. The inclusion criteria for participants were: 1) a registered nurse who worked at least 36 hours per week in the facility, 2) interacted daily with patients for at least 36 hours per week, and 3) had at least one year of experience as a bedside nurse. The study was a one-group pre- test, post- test, study conducted using a group of nurses in a rural community hospital and was available for completion for 14 months. The invitation and study details were disseminated via staff meetings/huddles which was initially commenced in September 2020 and later reimplemented to meet the target number of sample participants (66) which was reached

in November 2021. Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education. The Netlearning program approach was implemented due to the Covid 19 pandemic which caused restrictions on in-person education sessions in the facility.

Quantitative data on the variables of compassion satisfaction, burnout, and secondary trauma were collected through pre- and post- surveys from registered nurses in the acute care facility. Additionally, demographic statistics on gender, age, years work experience, ethnicity, degree, and work setting were collected. There were a total of 110 nurses who initially participated in the study, however 20 respondents were excluded as they were part-time employees and the inclusion criteria was for full-time employees and twenty surveys were incomplete. There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were three (4.3%) that did not provide a response for gender (Table 1). The sample was representative from the group of RNs chosen to participate in the research study. The sample had the key variables of a registered nurse who worked at least 36 hours per week, and had at least one year's experience as a bedside nurse.

Results

Descriptive Statistics

There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were 3

(4.3%) that did not provide a response for gender (see Table 1). The sample was representative from the group of RNs chosen to participate in the research study.

Manuscript 1 Table 1

Gender

Gender	Frequency	Percent
Male	8	11.4
Female	59	84.3
Total	67	95.7
No response	3	4.3
Total	70	100.0

Ages ranged from 18 to 70 years with most participants were between the ages of 51-60, 21 (30.0%). This was followed by 31-40, 16 (22.9%); 41-50, 15 (21.4%); 18-30, 11 (15.7%); and 61-70, 7 (10.0%) (see Table 2) .

Manuscript 1 Table 2

Age

Age	Frequency	Percent
18-30	11	15.7
31-40	16	22.9
41-50	15	21.4
51-60	21	30.0
61-70	7	10.0
Total	70	100.0

Most nurses were White, 52 (74.3%). This was followed by Asian, 7 (10.0%); Hispanic, 3 (4.3%); Black/African American, 2 (2.9%); and some other race, 1 (1.4%) (see Table 3).

Manuscript 1 Table 3*Ethnicity*

Ethnicity	Frequency	Percent
Asian	7	10.0
Black/African American	2	2.9
White	52	74.3
Hispanic	3	4.3
Other	1	1.4
Total	65	92.9
Prefer not to Answer	5	7.1
Total	70	100.0

Most participants had between 21 and 30 years of experience, 23 (32.9%) followed by participants with 11-20 years of experience (see Table 4).

Manuscript 1 Table 4*Experience*

Experience	Frequency	Percent
0-2	12	17.1
3-5	14	20.0
6-10	3	4.3
11-20	13	18.6
21-30	23	32.9
31 and up	5	7.1
Total	70	100.0

Most nurses' highest education level was a Bachelor's degree, 36 (51.4%). This was followed by an Associate degree in nursing , 28 (40.0%), and an MSN, 6 (8.6%) (see Table 5).

Manuscript 1 Table 5*Degree*

Degree	Frequency	Percent
Associate	28	40.0
Bachelor	36	51.4
MSN	6	8.6
Total	70	100.0

Most RNs worked in Medicine/Surgical/Oncology/Radiology, 31 (44.3%) (see Table 6).

Manuscript 1 Table 6*Work Setting*

Work Settings	Frequency	Percent
Medicine/Surgical/Oncology/Radiology	31	44.3
Education/Pre-anesthesia/OR/PACU	13	18.6
ED/Peds/Obstetrics	26	37.1
Total	70	100.0

Data Analysis

I conducted a Cronbach's alpha to measure the reliability of the PROQOL Version 5. The Cronbach's alphas for my study ranged from .842 to .902 (see Table 7). A generally accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater is a very good level (Nunally, 1978; Serbetar et al., 2016; Surucu & Maslaki, 2020).

Manuscript 1 Table 7*Reliability of Study Measures*

Measure	#Items	Cronbach's Alpha
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Compassion satisfaction (pre)	10	.902
Compassion satisfaction (post)	10	.898
Burnout (pre)*	10	.861
Burnout (post)*	10	.842
Secondary trauma (pre)	10	.863
Secondary trauma (post)	10	.867

*Five items on the burnout scale were reverse coded

Compassion satisfaction decreased from pre ($M = 40.14$, $SD = 5.36$) to post ($M = 39.20$, $SD = 5.94$); Burnout increased from pre ($M = 22.19$, $SD = 6.34$) to post ($M = 22.79$, $SD = 5.88$); and secondary trauma increased from pre ($M = 21.37$, $SD = 5.86$) to post ($M = 21.79$, $SD = 6.18$).

Difference scores were calculated by subtracting post scores from pre scores (pre – post).

Positive differences signified a decrease in the measure whereas negative difference scores signify an increase from pre to post. The mean difference scores for compassion satisfaction ranged from -10 to 13 ($M = 0.94$, $SD = 4.05$), burnout difference scores ranged from -11 to 26 ($M = -0.60$, $SD = 4.53$), and secondary trauma difference scores ranged from -16 to 16 ($M = -0.41$, $SD = 5.08$). Table 8 provides this information.

Manuscript 1 Table 8*Mean Difference Scores (Pre and Post)*

Difference Scores	Minimum	Maximum	<i>M</i>	<i>SD</i>
Compassion difference	-10.00	13.00	.94	4.05
Burnout difference	-11.00	26.00	-.60	4.53
Secondary Trauma difference	-16.00	16.00	-.41	5.08

Measurements of difference scores by years of experience were calculated (Table 4).

Regarding compassion satisfaction difference scores, the greatest increase in CS from pre to post was found in the 6-10 years' experience group with an average difference score of $M = -1.67$ ($SD = 2.52$). The negative sign indicated an increase in the measure from pre to post. The greatest decrease in the compassion satisfaction score was found in the 11-20 year group with an average difference score of $M = 2.08$ ($SD = 5.20$). The positive difference signifies a decrease in compassion satisfaction scores from pre to post. Regarding the greatest increase in burnout was found in the 11-20 years group with a mean difference score of $M = -1.85$ ($SD = 4.30$). The greatest decrease in burnout was found in the 3-5 years' experience group with a mean difference score of $M = 2.07$ ($SD = 7.63$). Lastly, the greatest increase in secondary trauma was experienced in the 0-2 years group with a mean difference of $M = -2.42$ ($SD = 6.02$). The greatest decrease in secondary trauma was found in the 3-5 years group with a mean difference of $M = 1.21$ ($SD = 5.18$).

Measurements of difference scores by work setting are provided in Table 9. Each work setting showed a decrease in mean compassion satisfaction with the greatest decreases

seen in the med/surg/oncology/radiology group with a mean difference score of $M = 1.48$ ($SD = 4.77$). There was a decrease in burnout in the med/surg/oncology/radiology ($M = 0.13$, $SD = 6.13$). The greatest increase in burnout was found in the Education/Pre-anesthesia/OR/PACU group with a mean difference score of $M = -1.85$ ($SD = 2.67$). The greatest increase in secondary trauma was found in the Education/Pre-anesthesia/OR/PACU group ($M = -1.77$, $SD = 5.51$). There was a decrease in secondary trauma in the ED/Peds/Obstetrics group ($M = 0.77$, $SD = 2.64$).

Table 9

Compassion, Burnout, and Secondary Trauma by Work Setting

Work Setting		<i>M</i>	<i>SD</i>
med/surg/oncology/radiology	Compassion_diff	1.48	4.77
	Burnout_diff	.13	6.13
	SecondaryTrauma_diff	-.84	6.26
Education/Pre-anesthesia/OR/PACU	Compassion_diff	.92	4.21
	Burnout_diff	-1.85	2.67
	SecondaryTrauma_diff	-1.77	5.51
ED/Peds/Obstetrics	Compassion_diff	.31	2.95
	Burnout_diff	-.85	2.57
	SecondaryTrauma_diff	.77	2.64

I had intended on analyzing the data using a paired t test. However, I conducted a MANOVA to address this first research question and hypotheses:

RQ1: What effect does an educational session on mindfulness have on the level of CF, STS, CS, and burnout in registered nurses who work in an acute care facility?

H01: There will be no effect on the level of CF, STS, CS, and burnout in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

H_{A1}: There will be an effect on the level of CF, STS, CS and burnout in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

I tested the assumptions of MANOVA. The level of measurement of my data met the assumption because these assumptions included a categorical level of measurement for the independent variable and two or more dependent variables measured at the interval level, independence of observations, normality of dependent variables within groups, no outliers, and homogeneity of variances (Field, 2015). The independent variable in this study was measured at the nominal level and there were three dependent variables measured at the interval level (CS, BO, and STS). There was independence of observations due to the study design as there was no relationship between the observations in each group of the independent variable or between the groups themselves. The skewness and kurtosis index were used to identify the normality of the data (Table 10). The results suggested the deviation of data from normality was not severe as the value of skewness and kurtosis index were below 3 and 10 respectively (Kline, 2011). Hair et al. (2010) and Bryne (2010) stated that data are considered to be normal if skewness is between -2 to $+2$ and kurtosis is between -7 to $+7$.

Table 10*Skewness and Kurtosis Descriptive Statistics*

	Skewness		Kurtosis	
CompassionSatisfaction_Pre	-.260	.287	-.440	.566
CompassionSatisfaction_Post	-.022	.287	-.868	.566
Burnout_pre	.454	.287	-.228	.566
Burnout_post	.141	.287	-.621	.566
SecondaryTrauma_Pre	.323	.287	-.568	.566
SecondaryTrauma_Post	.412	.287	-.546	.566

Visual inspection of histograms also supports approximate normality of pre and post-measures (Figures 3 through 8).

Figure 3*Histogram of Compassion Satisfaction Scores (Pre)*

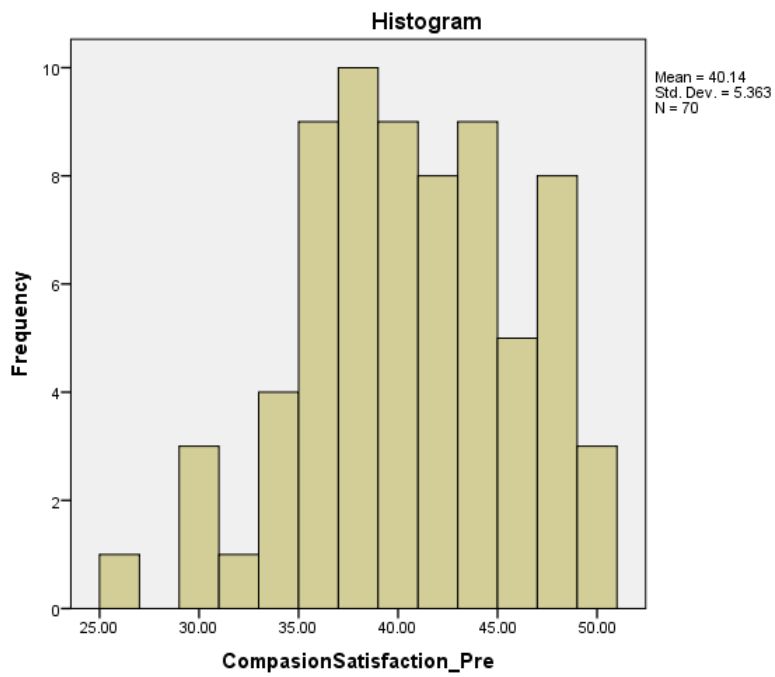


Figure 4

Histogram of Compassion Satisfaction Scores (Post)

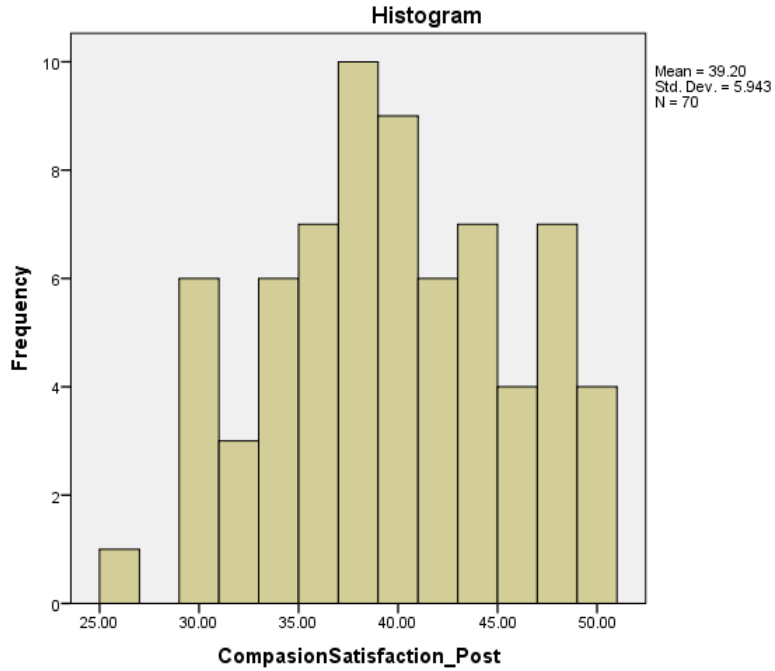
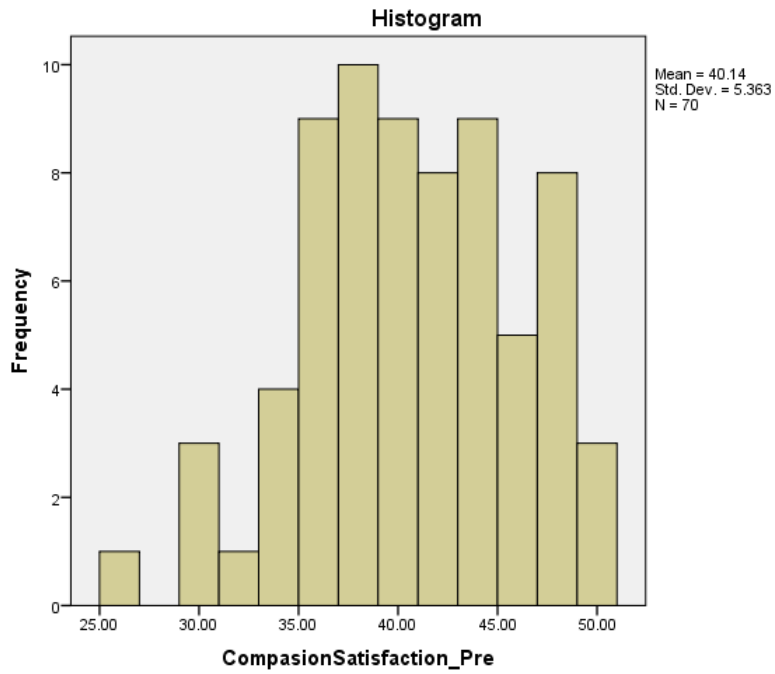


Figure 5

Histogram of Burnout Scores (Pre)

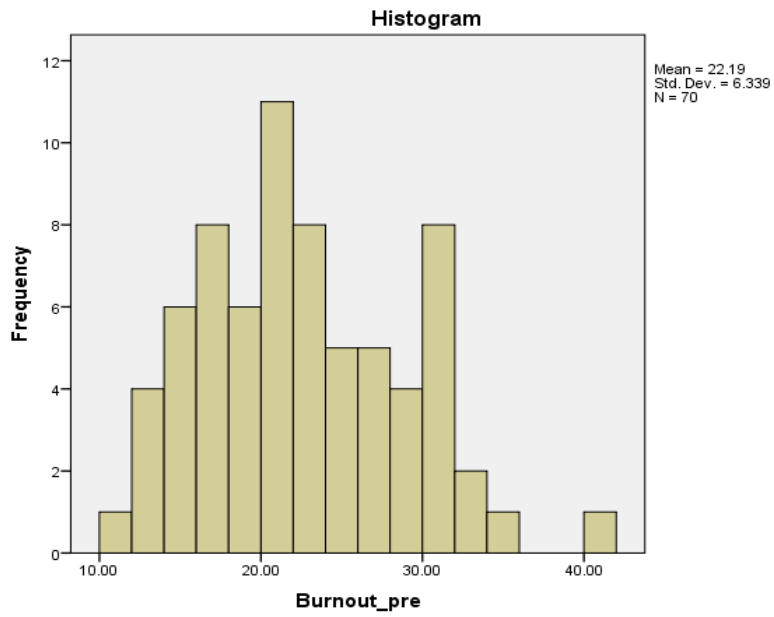


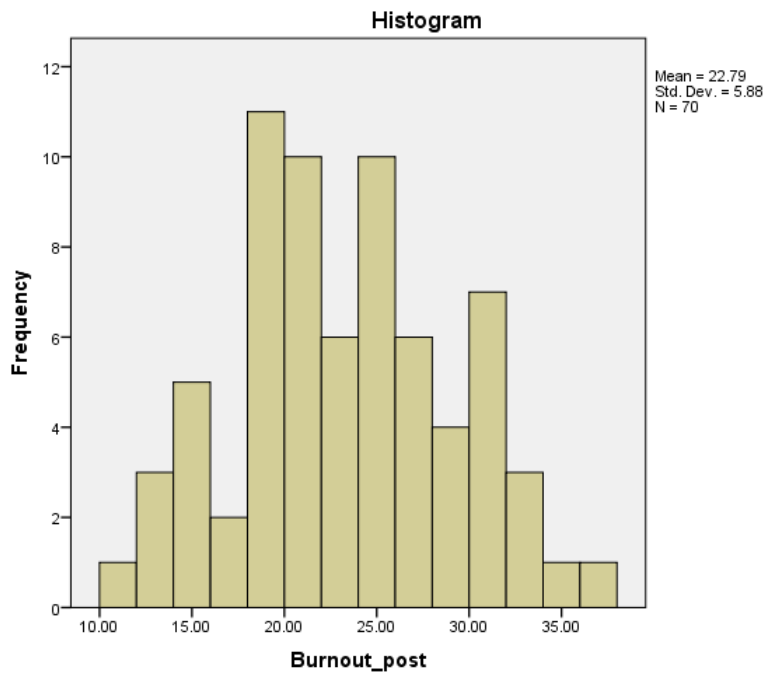
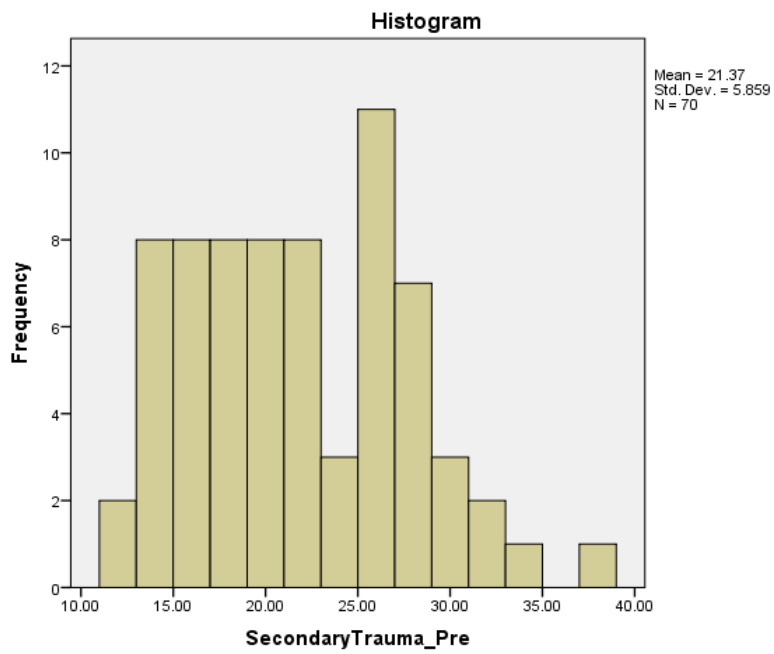
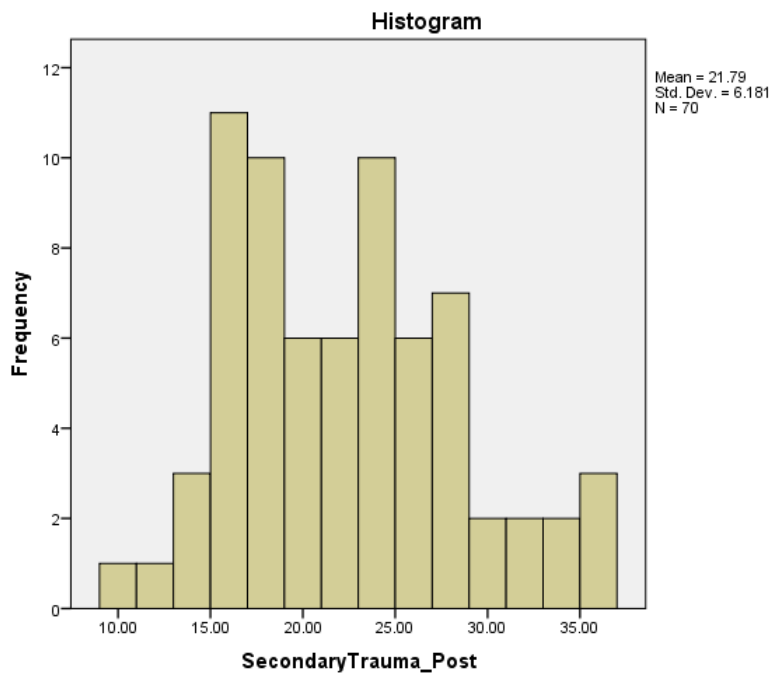
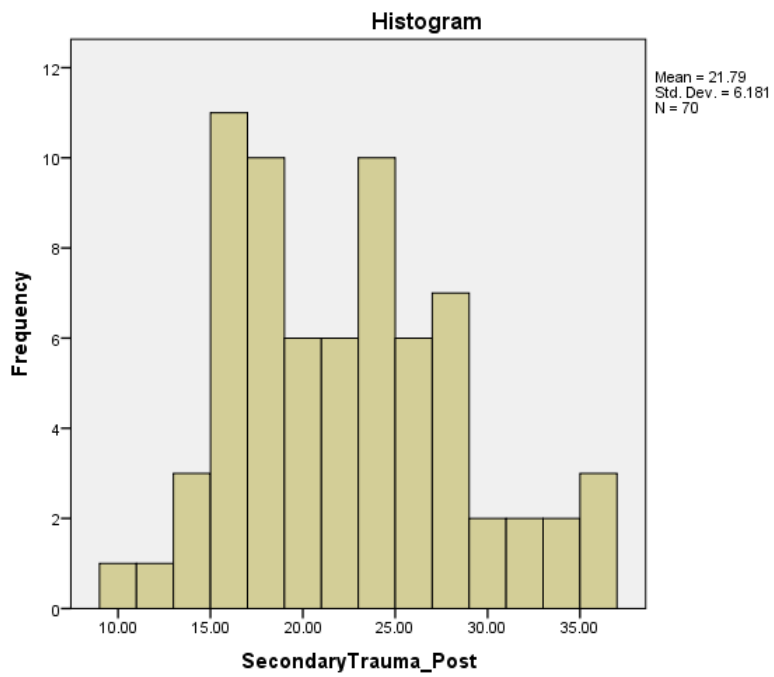
Figure 6*Histogram of Burnout Scores (Post)*

Figure 7

Histogram of Secondary Trauma Scores (Pre)

**Figure 8**

Histogram of Secondary Trauma Scores (Post)



There were no standardized scores that were outside -3 to +3 standard deviations, thus there were no outliers in the measures scales (see Table 11).

Table 11

Ranges of Standardized Values

	Minimum	Maximum
CompassionSatisfaction_Pre	-2.64	1.84
CompassionSatisfaction_Post	-2.22	1.82
Burnout_pre	-1.76	2.97
Burnout_post	-2.00	2.25
SecondaryTrauma_Pre	-1.60	2.67
SecondaryTrauma_Post	-1.91	2.30

Table 12

Multivariate Tests (RQ1)

Effect	Λ	F	Hypothesis df	Error df	<i>p</i>
Between Subjects Intercept					
	Wilks' Lambda .003	8596.860 ^b	3.000	67.000	.000
Within Subjects time	Wilks' Lambda .948	1.232 ^b	3.000	67.000	.305

The differences between pre and post-scores on the combined dependent variables of compassion satisfaction, burnout, and secondary trauma were not statistically significant, $F(3, 67) = 1.232, p = .305$; Wilks' $\Lambda = .948$ (see Table 12). The mean differences from pre to post were not statistically significant. Therefore, the null hypothesis was retained.

Discussion

Interpretation

The results of my study showed that the mindfulness based education session had no significant effect on reducing CF, BO, and STS in nurses in an acute care facility.

Therefore, the results of my study do not support that of previous studies which have revealed that mindfulness practice has a beneficial and holistic effect on the body, brain, mind, emotions and behavior of a person and reduces stress and improves overall health and well-being in the RN and aids in nurse retention (Alharbi, et al. , 2020; An et al., 2020).

Labrague and de los Santos (2021), found that fear of COVID-19 had an effect on nurses causing psychological distress, decrease in work satisfaction and an increased intent to leave. The study found that by fostering resilience in nurses by addressing fears of covid resulted in improved job outcomes, increased job satisfaction, lowered stress and intent to leave (Labrague & de los Santos, 2021). However, despite my study being undertaken during the COVID-19 pandemic, I did not infer that COVID-19 had an effect on the levels of CF, BO, TS and levels of CS on the nurses in an acute care facility.

My findings are consistent with other studies that show that mindfulness interventions have positive outcomes in modulating the stress response in nurses by reducing anxiety and depression and improving coping ability (Jun et al., 2020; Kang, et al., 2021;Saban; et al., 2021; Suleiman-Martos et al., 2020).

Limitations

Sample size was a limitation of this study. Although I did meet the sample size for my power analysis, my results are not generalizable to other RN groups. Difficulty recruiting participants was partly due to the COVID-19 pandemic. Another limitation was that this study was only carried out at one study site and therefore the sample is not representative of RN's at other facilities.

Implications

My study has the potential to promote social change by addressing the effects of CF, BO, and STS on the nurse. As the climate of nursing continuously evolves and changes, there is high demand for increased care which leads to high stress in the nurse population. High stress has been linked to feelings of dissatisfaction in the experienced nurse which leads to the nurse feeling ill equipped to perform their job which leads to CF, STS and BO and may cause the nurse to leave the workplace (Hayward, et al. , 2016; Kelly, 2020). When experienced nurses leave the workplace, less experienced nurses are exposed to situations that they have not previously encountered and may result in inadequate care that may have detrimental outcomes for the patients under their care. Inexperienced nurses have been shown to have difficulties in recognizing sepsis, deteriorations in a patient's status, and deficits in utilizing critical thinking skills that the experienced nurse has had time to develop which could have significant health consequences for the patient if not caught early in a health crisis (Harley, et al., 2019).

To reduce CF, BO and STS in the nurse, of an education program on mindfulness techniques may reduce levels of CF, BO and STS and increase levels of CS (Hylton-Rushton, et al., 2021). By implementing mindfulness teaching into the current practice of nurses, this could increase nurse retention in the world of nursing (Hylton-Rushton, et al., 2021).

My study has implications for nurse education. Even though the results of my study indicated that mindfulness interventions did not reduce CF, BO and STS in the acute care nurse, the format of the education process needs to be further explored and expanded upon. The implementation of mindfulness techniques has been well documented in nursing research but there are differing ideas on the length or shortness of a program being proven to be effective in reducing levels of CF, BO and STS in the acute care nurse. The results of my study did contribute to the literature by showing divergent results from previous findings. However, more research is indicated.

Recommendations

The results of my study indicated no significant differences in the levels of CF, BO, STS and CS following an education session on mindfulness. An inadequate sample size could have affected the strength of my findings or could result in a type II error, (Laerd Statistics, 2019). Future studies could focus on the implementation of mindfulness techniques during the orientation phase of a nurses' introduction to the work environment and also during the precepting stage. However; as the length and duration of a

mindfulness program have not been established in nursing literature at this time, further research studies are required (Sarazine et al., 2021). Another recommendation would be the education of nurses to recognize what CF, BO and STS are and how their everyday home and work life can be affected so that nurses become more intuitive to their own needs and not just to those of the patients under their care. Further exploration into the effects of CF BO, STS and CS and the effectiveness of mindfulness interventions would give nurse leaders, management, and nurse educators an indication on what support and efforts are needed by the nursing community to retain nurses in the workforce.

Conclusion

Mindfulness training and techniques can be used to reduce the number of nurses leaving the world of nursing and can be used to identify why nurses suffer from CF, BO and STS. The nurses who participated in the study did so in the middle of the COVID-19 pandemic when nursing stress was increased due to the pandemic and ever evolving changes in nurse practice according to CDC guidelines. The nurses who participated in the study ($n=70$) showed that the introduction of a mindfulness education session via the Netlearning format did not have any effect on CF, BO and STS or raised CS in the nurses in the acute care facility. A MANOVA test was conducted to compare the effects of the mindfulness education session on CF, BO, STS and CS. There was no significant difference in the levels of CF, BO, STS in the RN's at the acute care facility. Future research in the development and implementation of mindfulness education via the Netlearning format is

indicated to determine the effectiveness of mindfulness education in reducing CF, BO, and STS and raising levels of CS in nurses working in an acute care facility.

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Effect of Mindfulness Techniques on Compassion Fatigue and Burnout in

Experienced Nurses

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Outlet for Manuscript

The target journal for this manuscript is the American Journal of Nursing (AJN). AJN is a peer-reviewed journal that encourages submissions of original research, including manuscripts related to the practice and professional development of nursing (AJN; <http://www.lww.com>). AJN's only acceptable formatting for journal submission is the American Psychological Association (APA; www.apastyle.org). The AJN contains published nursing journals on many different topics, including quality and patient safety. The recurrent safety issue related to patient falls, an emerging nursing behavior, learned helplessness, and the possible implications to nursing practice and patient outcomes are the focus of this manuscript. The content presented represents discussion relevant to the promotion of clinical effectiveness and aligns with the AJN's mission to support the promotion of new nursing knowledge.

Abstract

The purpose of the study was to determine what effects a mindfulness-based intervention (MBI) session on the levels of compassion fatigue (CF), burnout (BO), secondary traumatic stress (STS) and compassion satisfaction (CS) in ($n= 70$) experienced nurses in an acute care facility, using the ProQOL version 5 assessment tool for CF. The 66 participants worked at least 36 hours a week providing care to patients. The differences between pre and post-scores based on years of work experience (6 groups) on the combined dependent variables of CS, BO and STS were not statistically significant, [$F(15, 171) = 1.232, p = .135$; Wilks' $\Lambda = .721$]. There were no significant differences in pre and post scores, [$F(3, 62) = 0.363, p = .780$; Wilks' $\Lambda = .983$] Ages ranged from 18 to 70 years with most people between the ages of 51-60, 21 (30.0%). Most nurses were White, 52 (74.3%) and had between 21 and 30 years of experience, 23 (32.9%). The highest education level was a Bachelor's degree 36 (51.4%). Thirty-one (44.3%) of the RNs worked in Medicine/Surgical/Oncology and Radiology. The implications of this study would indicate that the use of MBI to mitigate CF, BO, STS and raise levels of CS in the experienced nurse in acute care facilities to ensure that optimum care is given to the patient population.

Introduction

Caring for patients in the acute care hospital setting exposes nurses to a number of daily challenges to provide efficient, cost effective and competent care that meets patient's needs. Nurses are exposed to all types of pain, suffering, and increased care demands, which effect nurses physically and physiologically (Gustafsson et al., 2021; Sabo, 2011). Exposure to the suffering of others can result in a nurse developing compassion fatigue (CF), secondary traumatic stress (STS) and lead towards burnout (BO) (Gustafsson et al., 2021; Joinson, 1992; Stamm, 2010).

Compassion fatigue refers to the emotional and physical exhaustion that can affect professionals and caregivers over time and has been associated with a gradual desensitization to patient stories and a decrease in quality care for patients and clients. Compassion fatigue is described by Coetzee and Klopper (2010) as the emotional, physical, social, intellectual, and spiritual changes that occur with nurses' progressive exposure to stress and patient-interactions. Compassion fatigue is also defined as a disorder in which a nurse or other caregiver demonstrates feelings of fatigue, lack of empathy, and an accompanied depressed mood in relationship to work (Stamm, 2002). CF refers to the emotional and physical exhaustion that can affect professionals and caregivers over time and has been associated with a gradual desensitization to patient stories and a decrease in quality care for patients and clients. CF is associated with an increase in clinical errors, higher rates of depression and anxiety disorders, and a rise in

stress levels in the workplace climate. Increased stress levels in the nurse are linked to increased rates of stress in the household, divorce, and social isolation (Figley Institute, 2012; Gustafsson et al., 2021).

Secondary traumatic stress (STS) is a specific type of compassion fatigue that occurs as nurses are exposed to others' suffering or traumatic events (Coetzee & Klopper, 2010) may lead towards burnout (BO) (Joinson, 1992; Stamm, 2010). Burnout is 'associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively' (Stamm [2010](#):13). Stamm (2010) further defined burnout as being a syndrome composed of emotional exhaustion, depersonalization, and reduction of personal accomplishments.'

Research has shown that the experienced nurse leaves the profession due to a number of factors that include higher patient acuity, increased workload demands, ineffective working relationships among nurses and physicians, gaps in leadership support, all of which contribute to high stress. High stress has been linked to feelings of dissatisfaction in the experienced nurse which leads to the nurse feeling ill equipped to perform their job which leads to CF, STS and BO and may cause the nurse to leave the workplace (Hayward et al., 2016; Labrague et al., 2021). When experienced nurses leave the workplace, newer inexperienced nurses are exposed to situations that they have not previously experienced and may result in inadequate care that may have detrimental outcomes for the patients under their care. Inexperienced nurses have been shown to have

difficulties in recognizing sepsis, deteriorations in a patient's status, and deficits in utilizing critical thinking skills that the experienced nurse has had time to develop which could have significant health consequences for the patient if not caught early in a health crisis (Harley et al., 2019; Labrague et al., 2021).

Literature Search

I conducted a literature review using electronic databases and search engines accessible from the Cochrane Library and Walden University Library, CINAHL, Medscape, Nursingworld.org, and Google Scholar. Other sources included online e-books, hand-picked articles, and peer-reviewed journals. The information included in this research was derived from research studies that were conducted between 1992-2019. Key search terms included: *compassion fatigue*, *compassion fatigue in nurses*, *secondary traumatic stress disorder*, *compassion satisfaction*, and *burnout*. Additional search terms included: *patient satisfaction*, *nurse fatigue*, *emotional exhaustion*, *self-care*, *mindfulness techniques*, *education*, and *self-awareness*. The results of the research are synthesized below and include, compassion fatigue, burnout, depersonalization, the impact of health care providers leaving the healthcare profession, compassion satisfaction, and current practices to reduce CF in nurses.

Significance or Importance

It is important for health care facilities to retain experienced nursing staff for quality nursing care and improved patient outcomes (Labrague., et al 2021; Mason, et al, 2014;).

Retaining nurses is crucial so that quality health care can be provided to patients and their families (Mbemba et al., 2013; O' Callaghan et al., 2020).

The demographic factor of years of experience in nurses and the effect of CF, STS and BO has been investigated (Cavanagh et al., 2019; Hunsaker & Maughan, 2014; Kolthoff & Hickman, 2017). Results of research studies have shown conflicting findings on the levels of CF, STS, and BO the experienced nurse reports. Rushton et al. (2015) reported that nurses working in different areas of nursing such as oncology, pediatrics, ED and the ICU had varying levels of emotional disengagement and depersonalization in their work due to differences in the severity of illness, workload, and management demands. The amount of emotional disengagement and depersonalization the nurse reported in different specialties of nursing had an effect on the level of CF, STS and BO that were reported by the nurses in these areas. Other findings have shown that the more experience a registered nurse has, the less they suffer from CF, STS and BO, and that they have higher levels of CS (Potter et al., 2015).

Many hospitals are turning to mindfulness interventions to increase patient satisfaction by addressing staff stress levels (Owens, 2020; Praissman, 2008). A pilot study conducted by Horner, et al. (2014) found that when staff were introduced to a 10 week mindfulness training program, nurses' reported improvement in levels of burnout and stress and patient satisfaction levels. However, there is limited research on whether mindfulness training will be beneficial in reducing levels of CF, STS, and BO and raising levels of CS

in the experienced nurse. By investigating the effectiveness of a short educational session on mindfulness, I provided information on the of mindfulness training in the experienced nurse and whether that experienced nurse will be able to provide effective, compassionate care to patients due to a lower level of STS and BO.

Mindfulness practice allows for the nurse to take a step back, and recognize what is important at that specific time, and to develop a sense of equanimity which allows the nurse to have mental calmness, composure in a high stress situation with a critically ill patient (Owens, 2020; Young, 2013). This allows nurses to stabilize their focus/attention and engage with the patient while accurately assessing patient needs while providing a high quality of care and compassionate efficient care for the patient which increases CS in the nurse and satisfaction for the patient for the care that they receive (Barratt, 2017). Increasing CS in the nurse allows for increased motivation for organizational change by the nurse which allows for progressive and quality nursing care for the patient (Leonard, 2016). Mindfulness training allows the nurse to cultivate compassion for themselves which fosters a compassionate nature towards the patient, their co-workers and collaboration between health care professionals which promotes patient focused care (Barratt, 2017; Conversano., et al, 2020). By fostering a positive work environment through mindfulness practice, the health care facility benefits from higher Press Ganey scores for patient satisfaction and reimbursement for the care provided to their patients. This, in turn, effects positive social change and fosters a sense of community between the

health care facility and the community that they provide healthcare for as the patients develop a sense of trust with that facility as high patient satisfaction scores indicate high quality medical care.

Theoretical Framework.

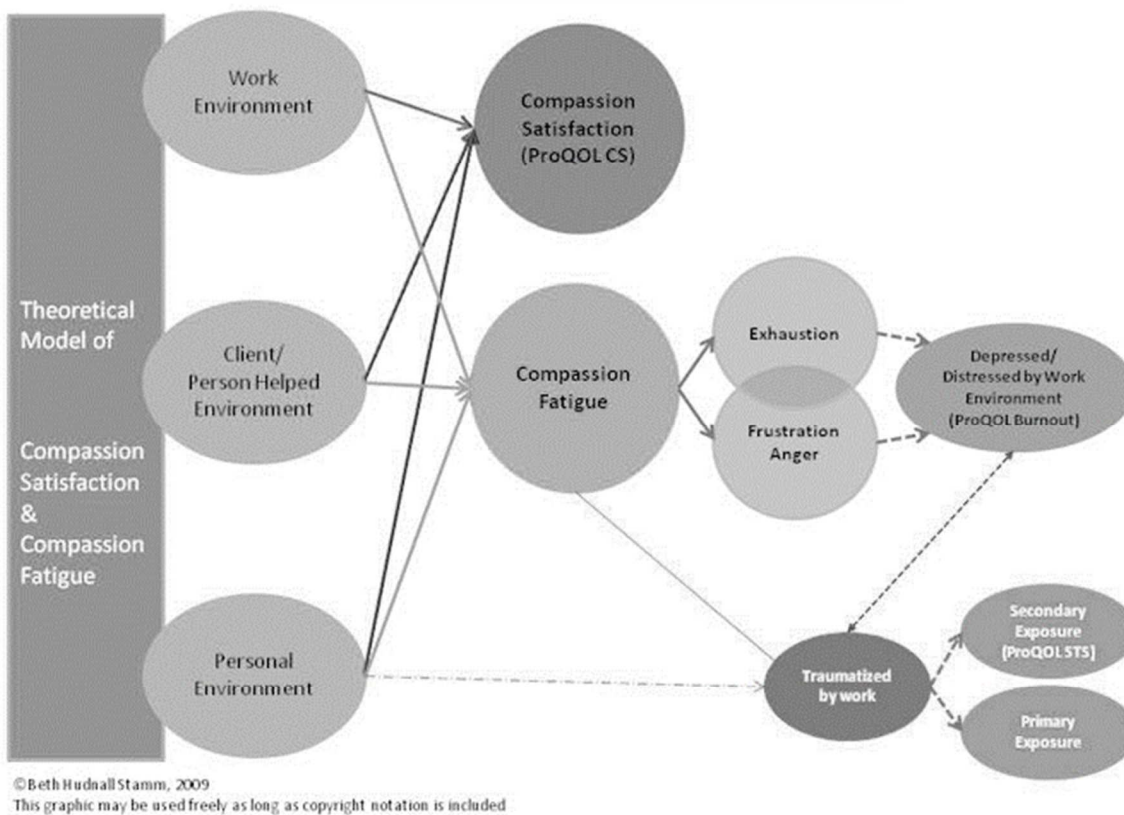
Figley (2002) recognized that CF may develop because of a caregiver's exposure to a patient's experiences which then joins with that caregiver's natural empathy and may cause distress to the caregiver. The CS-CF (Compassion Satisfaction- Compassion Fatigue) model shows a theoretical path analysis of the positive outcomes (CS) and negative outcomes (CF) a caregiver may encounter while helping patients who have experienced traumatic stress (Hunsake, et al., 2015). Three specific environments are associated with the development of CF and CS: the work environment, client/persons helped environment and personal environment which cause both the positive and negative aspects of caring for others.

The theoretical Model of Compassion Satisfaction and Compassion Fatigue was designed by Stamm (2010) to show how three environments in a person's life are connected to the positive and negative aspects of helping others. The environments are described as being- the actual work situation itself, the environment of the person or people with whom that person is providing care or assistance and the personal environment that that person brings to work.

Figure 1 illustrates the elements of Professional Quality of Life with the central components of CS and CF. CS is the positive aspect of helping others such as in the nursing profession, and CF is the negative aspect of caring for others. This is a consequence of caring for others and being exposed to increasingly sicker patients, increased work demands and traumatic situations where the nurse is exposed to the pain, suffering and even the death of a patient. A nurse may work in a poor environment which causes CF but still derive CS that they are helping others despite the poor environment. Work-related trauma is described by Stamm (2010) as having a distinctive aspect of fear associated with it, which although being a rare complication experienced by the nurse, is what develops into BO which can have a very powerful effect on a person. When BO and trauma are present in a nurse's life, life can become very difficult and overwhelming not only in their work environment but also their home life. The nurse may experience feelings of dread about work, have mental and physical exhaustion, sleep issues, and depression which may cause nurses to disengage from the patients they care for and from their own family. Nurses who are suffering from BO may be less motivated and may experience lower cognitive functioning due to emotional exhaustion which could put patients at risk of urinary tract infections, falls and surgical site infections (Alharbi, et al. 2020; Cimmotti, et al., 2012).

Manuscript 2 Figure 1

Model of Compassion Satisfaction and Compassion Fatigue



From ProQOL Manual by B. Stamm, 2009, *The Concise Manual for the Professional Quality of Life Scale*, p. 11 <https://doi.org/proqol.org/proqol-manual>

My research study can make a positive contribution to the ongoing research on CF, STS, CS and BO as it will provide information to nurse educators, nurse managers and nurses about the effect of how a mindfulness session could reduce CF, STS and its development into BO and raise CS. I investigated whether teaching the Mindfulness technique to

experienced nurses in an acute care facility will have an effect on increasing awareness of STS and its progression to BO, and methods that can increase CS in the nurse and hopefully prevent that nurse experiencing STS and BO.

Relevant Scholarship

Research has shown that mindfulness has a beneficial and holistic effect on the body, brain, mind, emotions and behavior of a person. Mindfulness is described as being an efficacious intervention to reduce stress and improve overall health and well-being (Robins, et al., 2014). By practicing mindfulness, a person encounters increased self-awareness of their thoughts, emotions and experiences (Copeland, 2020; Kang & Myung, 2021).

Mindfulness was defined by Kabat-Zimm (2003) as the awareness that comes through paying attention on purpose, and in a non-judgmental way to a person's present moment experience. The keys to mindfulness practice involve the person observing, noticing, and accepting a situation rather than reacting with evaluation judgment to that situation at that time. The practitioner is encouraged to pay attention to the present moment, be aware of their breathing, and observe what is happening both externally and internally. This allows the practitioner to re-orient themselves, adopt a reflective stance on how to work through the situation and suspend judgement about the situation they are facing. In the nurse this enables them to calm their mind, body, and emotions and deal effectively with the

situation without becoming overly stressed which can promote CF (Copeland, 2020; Kabat-Zinn, 1990).

Mindfulness intervention research has shown positive outcome in modulating the stress response in people through reduction in anxiety and depression levels and an improved coping ability (An, et al. 2020; Jun, et al., 2021). Because of the effects of mindfulness interventions, there has been a growing interest in what it is and how it can be applied in healthcare. Through mindfulness practice the person experiences increased self-awareness of their thoughts, emotions and experiences (Strauss, et al., 2021).

Mindfulness-based cognitive behavioral therapy (MBCT) is a component of mindfulness intervention education. MBCT training allows a person to train their mind to bring attention and awareness to the present (Copeland, 2020; Suleiman et al., 2020). By incorporating this technique, nurses can turn their attentional resources to the immediate experience rather than ruminating on previous anxiety-saturated experiences (Gauthier et al., 2014; Talebi, 2021). This is important for the experienced nurse to evaluate a situation that is causing them stress and use adaptive techniques to reduce the level of stress in that situation and allows for the levels of psychological and physiological effects that stress has on a person's psycho-neuroendocrine/immune and autonomic nervous system to be decreased so they can more effectively handle the situation that is causing stress (Arias et al., 2006). By educating the experienced nurse how to recognize the symptoms

of CF, STS, and BO with mindfulness, nurses; levels of psychological and physiological levels may not reach a level of BO which may cause them to leave the profession.

Research Questions and Design

RQ1: What effect does an educational session on mindfulness have on the level of CF, STS, CS and burnout in nurses by years of experience who work in an acute care facility?

H₀1: There will be no effect on the level of CF, STS, CS and burnout by years of experience in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

H_A1: There will be an effect on the level of CF, STS, CS and burnout by years of experience in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

Nature of the study and design

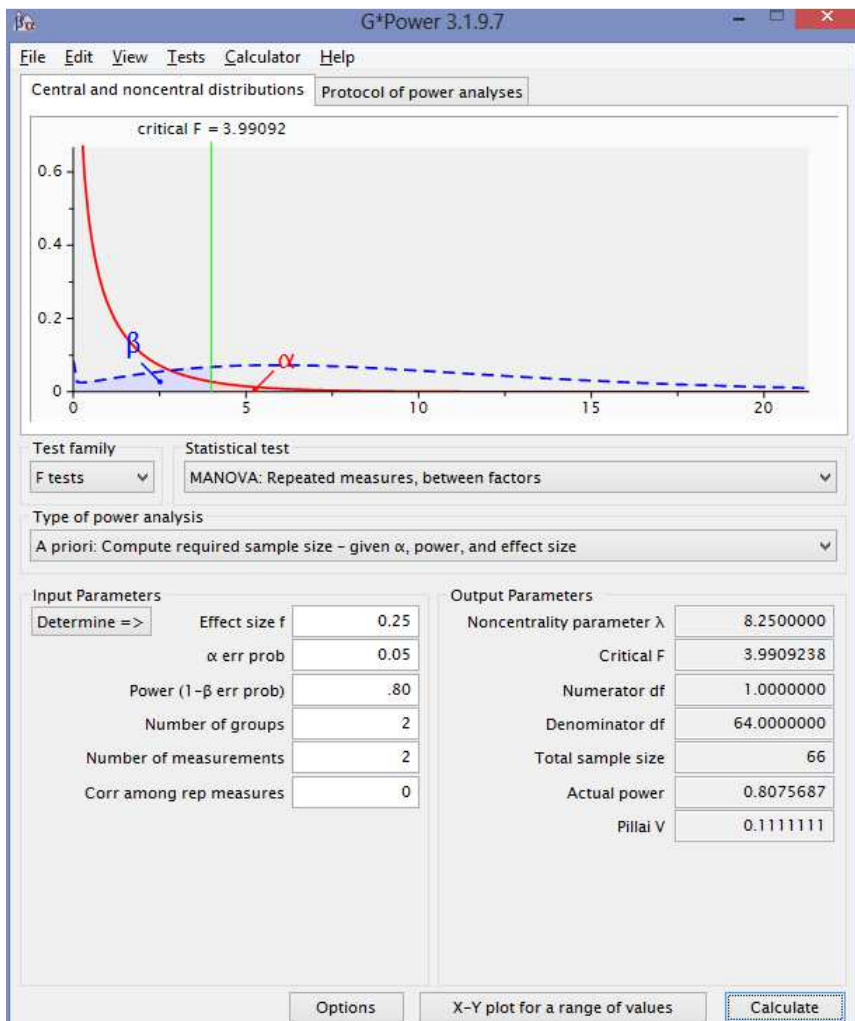
I conducted a quantitative, quasi-experimental one group pre- test, post- test design using six groups of registered nurses categorized by years of experience in an acute care facility and was guided by the Compassion Satisfaction and Compassion Fatigue Model (CS-CF) (Stamm, 2010). The independent variable was an educational session on mindfulness.

The dependent variables studied were CF, STS, and BO (Appendix D) Demographic data that included - gender (male/female); job status (work commitment- full or part-time); race/ethnicity, education (highest education level); age in years; experience as an RN (years); setting (specialty practice area); time on the unit (years); and certification

(professional) was used as an identifying measure. The results from this study may assist nurses to develop an understanding of mindfulness techniques to reduce CF, STS, BO and raise CS levels which in turn will increase job satisfaction and improve nurse retention and patient safety.

Manuscript 2 Figure 2

*G*Power*



Methods

Population

The target population were experienced registered nurses (RNs) who worked in different areas of nursing that provide patient care in an acute care facility. A minimum of one years' experience as a bedside nurse was required to participate.

Sample and Power

A nonprobability, convenience sample was used (Burkholder et al., 2012). The inclusion criteria were: (a) a registered nurse who worked at least 36 hours per week in the facility, (b) interacted daily with patients for at least 36 hours per week, c) had at least one year experience as a bedside nurse. The rationale for including a minimum of at least one year's experience as a nurse and working 36 hours per week at the bedside was that the nurses participating in the study would have had experience in patient care and would have been exposed to enough traumatic events that contribute to the development of CF, STS and BO.

A power analysis was conducted to determine the probability that the mindfulness session was effective in lowering CF, STS, BO levels in the RN's participating in the study and assessed if the levels of CS had increased in the study's population. Using Faul et al., (2009) G* Power software, an a priori power analysis was performed using a paired sample *t*-test. A power level of a study equal to $1-\beta$ represented the sensitivity of the test. Power is the probability of finding a given, existing difference or effect as significant. By

setting the level at 0.8, if a difference or effect exists from the session being introduced, there is a 20% probability of a type II error and the null hypothesis being incorrectly accepted. For this study, alpha (α) was set at 0.05 level of significance which indicates a 5% possibility of the null hypothesis being rejected (Frankfort-Nachmias & Leon-Guerrero, 2015). Sample size was calculated with a power of 0.8, and a medium effect of .25 which yielded a sample size of 66 which represents a large strength (79%) of relationship between the study variables.

Variables and Sources of Data

The study was a one group pre- test, post- test, quantitative study, I recruited RNs who worked in a rural community hospital, Permission to conduct the research study was obtained from the hospital's IRB and Walden IRB (09-04-20- 0618315). Prospective participants were invited to attend the education session via an email (Appendix C). The invitation and study details were disseminated via staff meetings/huddles. Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education. Quantitative data on the variables of CF, STS, BO and CS were collected through pre- and post- surveys from registered nurses in the acute care facility. The purpose and significance of the study, how the data would be used and a disclaimer that participation in the study was voluntary was sent to the registered nurses via an email.

The demographic information included: gender (male/female), job status (work commitment: full or part time), race/ethnicity, education (highest education level), age in years, experience as an RN (years), setting (specialty practice area), time on unit (years), certification (professional) (Appendix D, Table 1).

Data were stored on a password protected laptop, with a backup stored to a password protected cloud server, Microsoft OneDrive. Confidentiality and anonymity were maintained for all study participants. I will keep the data secure using a password protected computer which will be backed up on a password-protected hard drive. I will be the only one who will know the password.

Instrumentation

Data were collected using the ProQOL Version 5 to measure the level of CF, STS, BO and CS. Permission to use Stamm's scale was obtained via standard permissions on the ProQOL website (Permission to Use ProQOL, 2019, Appendix B). The ProQOL 5 consists of three subscales that are used to measure compassion satisfaction and compassion fatigue. Two of the subscales: burnout and secondary traumatic stress are components used to measure CF. The third subscale is compassion satisfaction. The ProQOL 5 is a 30-item self-report scale that uses a 5-point Likert scale scoring from 1= *never* to 5= *very often* (Stamm, 2010). This scale is the most commonly used scale to measure the negative and positive effects of helping patients who have experienced suffering and trauma, and the effects the patient's experiences have on nurses which may

lead to CF and CS. Using the ProQOL 5 assessment tool, will allow characterization of the levels of CS, BO and CF among participants and to compare nursing specialty, gender, and other personal/professional demographic factors (Appendix A). The ProQOL scale has been extensively tested over many years, and has demonstrated reliability through α subscale reliabilities, respectively, of 0.80 for compassion fatigue, 0.87 for compassion satisfaction, and 0.72 for burnout (Stamm, 2010). The ProQOL scale has been tested for validity using the Rasch analysis procedure on each of the three subscales. Rasch measurement places importance on whether the data collected from an instrument's items provides the researcher with an invariant representation of an underlying ability of trait of interest (CF, STS, BO and CS). Rasch analysis transforms ordinal data into linear measures with equal-interval units called logits which are used to describe the measures of both individuals and items (Boone, Staver & Yale, 2014). Rasch analysis allows for comparison of a person to other individuals using the items in the measurement scale (Peixoto Souza et al., 2017).

Design and Analysis

The design used for this research study was a quantitative, quasi-experimental one group pre- test, post- test design. The session was an educational program on mindfulness produced by the facility and was delivered through the Netlearning system that the facility used for education. Mindfulness techniques can decrease CF, STS, BO and increase CS levels in RN's who work in acute care facilities. This design was chosen as it

allows measurement of CF, STS, BO and CS prior to the session and following the session in a field setting such as an acute care hospital due to difficulties in random assignment of the educational session on mindfulness. The dependent variables pre and post session were measured using the ProQOL Version 5 survey which uses a Likert 5 point scale. The use of a 5 or 7 point scale like the Likert scale allows the researcher less chance of departing from intervalness (where there is a departure from the assumption of normal distribution due to fewer numbers of points on the scale) which could have an effect of a Type I or Type II error occurring (Schrum et al., 2020; Simon & Goes, 2013). Using this method if the average post-test score is better than the average pre-test score, the researcher can conclude that the session (education session on mindfulness techniques) may be responsible for the improvement (Van der Reit, et al, 2018).

The data were analyzed using a paired samples t-test in Statistical Package for Social Sciences (SPSS Version 27) to determine if the educational session would affect the level of CF, STS, BO and CS in a group of Registered Nurses in the acute care facility. The pre and post-test questionnaires was matched using unique identifiers. Quantitative analysis was applied to the research question.

Data were screened for missing and outlier responses and included a review of all demographic information. Descriptive statistics were calculated for all variables.

Results

Execution

Recruitment and Data Collection

The target population of the study was registered nurses (RN's) who worked in all areas of nursing that provided patient care in an acute care facility. A non-probability, convenience sample was used (Burkholder, Cox, & Crawford, 2012). The inclusion criteria for participants were: 1) a registered nurse who worked at least 36 hours per week in the facility, 2) interacted daily with patients for at least 36 hours per week, and 3) had at least one year of experience as a bedside nurse. The study was a one-group pre- test, post- test, study conducted using a group of nurses in a rural community hospital. The invitation and study details were disseminated via staff meetings/huddles which was initially commenced in September 2020 and later reimplemented to meet the target number of sample participants (66) which was reached in November 2021 . Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education. The Netlearning program approach was implemented due to the Covid 19 pandemic which caused restrictions on in-person education sessions in the facility. The ProQOL V has sub-scales for compassion satisfaction, burnout and secondary traumatic stress. This instrument was chosen as it has been shown to be a valid and reliable measure of CS, BO and STS (Stamm, 2010).

Quantitative data on the variables of compassion satisfaction, burnout, and secondary trauma were collected through pre- and post- surveys from registered nurses in the acute care facility. Additionally, demographic statistics on gender, age, years' work experience, ethnicity, degree, and work setting were collected. There was a total of 110 nurses who initially participated in the study, however 20 respondents were excluded as they were part-time employees, and the inclusion criteria was for full-time employees and twenty surveys were incomplete. There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were three (4.3%) that did not provide a response for gender (Table 1). The sample was representative from the group of RNs chosen to participate in the research study. The sample had the key variables of a registered nurse who worked at least 36 hours per week, and had at least one year's experience as a bedside nurse.

Results

Descriptive Statistics

There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were three (4.3%) that did not provide a response for gender (see Table 1). The sample was representative from the group of RNs chosen to participate in the research study.

Manuscript 2 Table 1*Gender*

	Frequency	Percent
Male	8	11.4
Female	59	84.3
Total	67	95.7
No response	3	4.3
Total	70	100.0

Ages ranged from 18 to 70 years with most people between the ages of 51-60, 21 (30.0%). This was followed by 31-40, 16 (22.9%); 41-50, 15 (21.4%); 18-30, 11 (15.7%); and 61-70, 7 (10.0%) (see Table 2).

Manuscript 2 Table 2*Age*

Age	Frequency	Percent
18-30	11	15.7
31-40	16	22.9
41-50	15	21.4
51-60	21	30.0
61-70	7	10.0
Total	70	100.0

Most nurses were White, 52 (74.3%). This was followed by Asian, 7 (10.0%); Hispanic, 3 (4.3%); Black/African American, 2 (2.9%); and some other race, 1 (1.4%) (see Table 3).

Manuscript 2 Table 3*Ethnicity*

Ethnicity	Frequency	Percent
Asian	7	10.0
Black/African American	2	2.9
White	52	74.3
Hispanic	3	4.3
Other	1	1.4
Total	65	92.9
Prefer not to Answer	5	7.1
Total	70	100.0

Most participants had between 21 and 30 years of experience, 23 (32.9%) followed by participants with 11-20 years of experience (see Table 4).

Manuscript 2 Table 4*Experience*

Experience	Frequency	Percent
0-2	12	17.1
3-5	14	20.0
6-10	3	4.3
11-20	13	18.6
21-30	23	32.9
31 and up	5	7.1
Total	70	100.0

Most nurses' highest education level was a Bachelor's degree, 36 (51.4%). This was followed by an Associate degree in nursing, 28 (40.0%), and an MSN, 6 (8.6%) (see Table 5).

Manuscript 2 Table 5*Degree*

Degree	Frequency	Percent
Associate	28	40.0
Bachelor	36	51.4
MSN	6	8.6
Total	70	100.0

The majority of RNs worked in Medicine/Surgical/Oncology/Radiology, 31 (44.3%). (see Table 6).

Manuscript 2 Table 6*Work Setting*

Work Setting	Frequency	Percent
Medicine/Surgical/Oncology/Radiology	31	44.3
Education/Pre-anesthesia/OR/PACU	13	18.6
ED/Peds/Obstetrics	26	37.1
Total	70	100.0

Data Analysis

I conducted a Cronbach's alpha to measure the reliability of ProQOL Version 5. The Cronbach's alphas for my study ranged from .842 to .902 (see Table 7). A generally accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater is a very good level (Surucu & Maslaki, 2020).

Manuscript 2 Table 7*Reliability of Study Measures*

Measure	#Items	Cronbach's Alpha
Compassion satisfaction (pre)	10	.902
Compassion satisfaction (post)	10	.898
Burnout (pre)*	10	.861
Burnout (post)*	10	.842
Secondary trauma (pre)	10	.863
Secondary trauma (post)	10	.867

Five items on the burnout scale were reverse coded. Overall measures of compassion satisfaction, and compassion fatigue as measured by burnout, and secondary trauma were formed by summing the responses of the corresponding items that comprised each

measure. As a result, the possible range for each measure could be from 10 to 50. Pre and post-measures are provided in Table 8.

Manuscript 2 Table 8

Pre and Post Scores (N = 70)

Pre and Post Scores	Minimum	Maximum	<i>M</i>	<i>SD</i>
Compassion Satisfaction (Pre)	26.00	50.00	40.14	5.36
Compassion Satisfaction (Post)	26.00	50.00	39.20	5.94
Burnout (Pre)	11.00	41.00	22.19	6.34
Burnout (Post)	11.00	36.00	22.79	5.88
Secondary Trauma (Pre)	12.00	37.00	21.37	5.86
Secondary Trauma (Post)	10.00	36.00	21.79	6.18

Compassion satisfaction decreased from pre ($M = 40.14$, $SD = 5.36$) to post ($M = 39.20$, $SD = 5.94$); Burnout increased from pre ($M = 22.19$, $SD = 6.34$) to post ($M = 22.79$, $SD = 5.88$); and secondary trauma increased from pre ($M = 21.37$, $SD = 5.86$) to post ($M = 21.79$, $SD = 6.18$).

Difference scores were calculated by subtracting post scores from pre scores (pre – post). Positive differences signified a decrease in the measure whereas negative difference scores signify an increase from pre to post. The mean difference scores for compassion satisfaction ranged from -10 to 13 ($M = 0.94$, $SD = 4.05$), burnout difference scores ranged from -11 to 26 ($M = -0.60$, $SD = 4.53$), and secondary trauma difference scores ranged from -16 to 16 ($M = -0.41$, $SD = 5.08$). Table 9 provides this information.

Manuscript 2 Table 9*Mean Difference Scores (Pre-Post)*

Mean Difference Scores (Pre- Post)	Minimum	Maximum	<i>M</i>	<i>SD</i>
Compassion difference	-10.00	13.00	.94	4.05
Burnout difference	-11.00	26.00	-.60	4.53
Secondary Trauma difference	-16.00	16.00	-.41	5.08

Measurements of difference scores by years of experience were calculated (Table 10).

Regarding compassion satisfaction difference scores, the greatest increase in compassion satisfaction from pre to post was found in the 6-10 years' experience group with an average difference score of $M = -1.67$ ($SD = 2.52$). The negative sign indicated an increase in the measure from pre to post. The greatest decrease in the compassion satisfaction score was found in the 11-20 years' experience group with an average difference score of $M = 2.08$ ($SD = 5.20$). The positive difference signifies a decrease in compassion satisfaction scores from pre to post. Regarding the greatest increase in burnout was found in the 11-20 years group with a mean difference score of $M = -1.85$ ($SD = 4.30$). The greatest decrease in burnout was found in the 3-5 years' experience group with a mean difference score of $M = 2.07$ ($SD = 7.63$). Lastly, the greatest increase in secondary trauma was experienced in the 0-2 years group with a mean difference of $M = -2.42$ ($SD = 6.02$). The greatest decrease in secondary trauma was found in the 3-5 years group with a mean difference of $M = 1.21$ ($SD = 5.18$).

Manuscript 2 Table 10*Compassion, Burnout, and Secondary Trauma by Years of Experience*

Years experience		<i>M</i>	<i>SD</i>
0-2	Compassion_diff	1.08	1.88
	Burnout_diff	-1.00	2.86
	SecondaryTrauma_diff	-2.42	6.02
3-5	Compassion_diff	-.07	3.58
	Burnout_diff	2.07	7.36
	SecondaryTrauma_diff	1.21	5.18
6-10	Compassion_diff	-1.67	2.52
	Burnout_diff	-1.33	3.21
	SecondaryTrauma_diff	-.33	2.52
11-20	Compassion_diff	2.08	5.20
	Burnout_diff	-1.85	4.30
	SecondaryTrauma_diff	-.69	5.41
21-30	Compassion_diff	1.22	4.81
	Burnout_diff	-1.22	3.18
	SecondaryTrauma_diff	-.22	5.03
31 and up	Compassion_diff	.80	2.59
	Burnout_diff	-.60	2.51
	SecondaryTrauma_diff	-.40	2.61

Measurements of difference scores by work setting are provided in Table 11. Each work setting showed a decrease in mean compassion satisfaction with the greatest decreases seen in the med/surg/oncology/radiology group with a mean difference score of $M = 1.48$ ($SD = 4.77$). There was a decrease in burnout in the med/surg/oncology/radiology ($M = 0.13$, $SD = 6.13$). The greatest increase in burnout was found in the Education/Pre-anesthesia/OR/PACU group with a mean difference score of $M = -1.85$ ($SD = 2.67$). The greatest increase in secondary trauma was found in the Education/Pre-

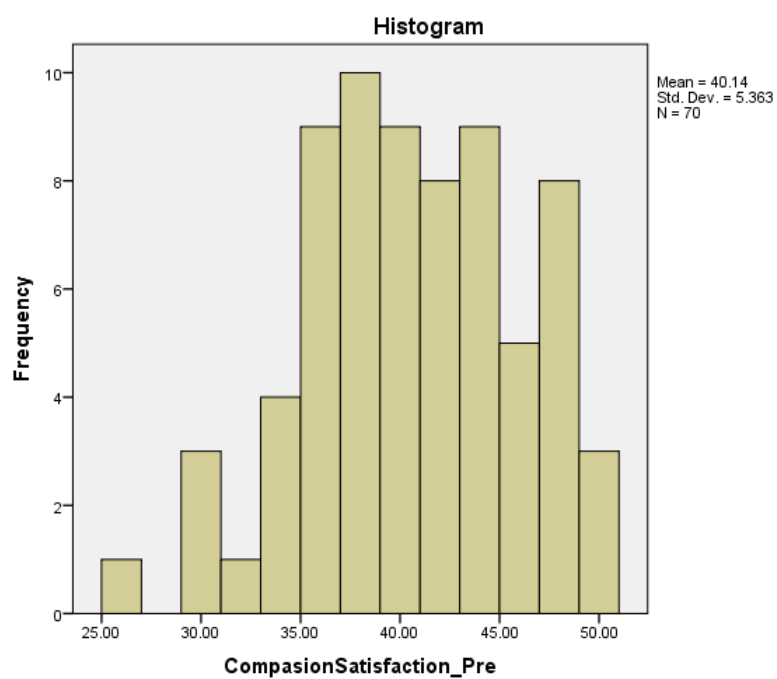
anesthesia/OR/PACU group ($M = -1.77$, $SD = 5.51$). There was a decrease in secondary trauma in the ED/Peds/Obstetrics group ($M = 0.77$, $SD = 2.64$).

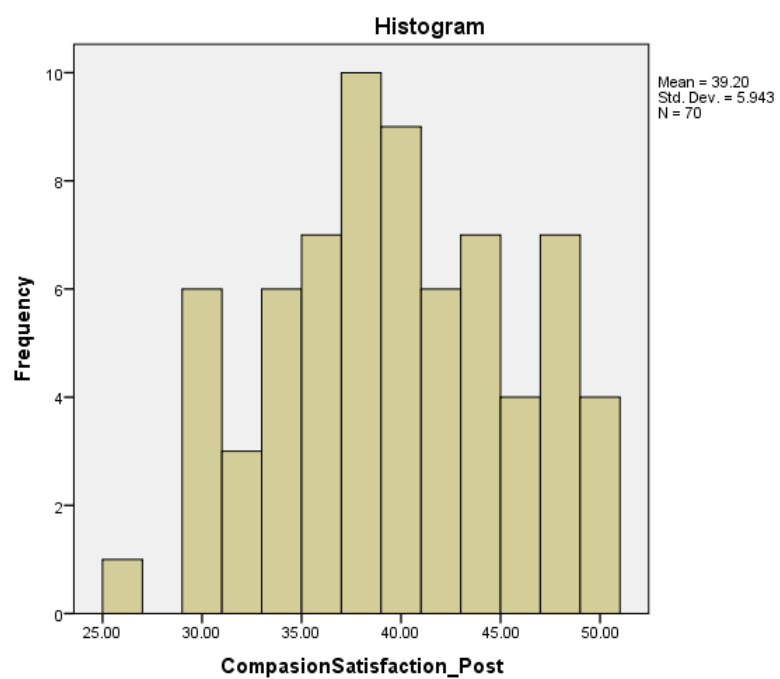
Manuscript 2 Table 11

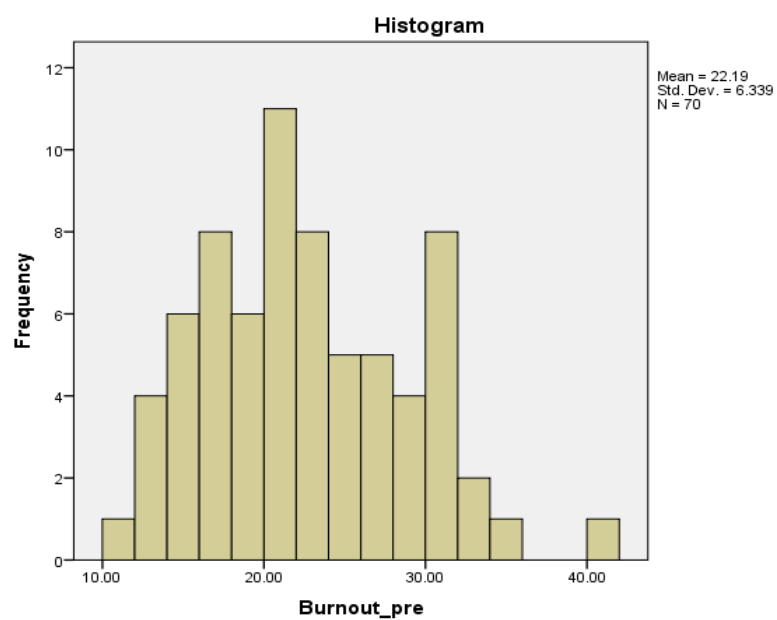
Measurements of Different Scores by Work Setting

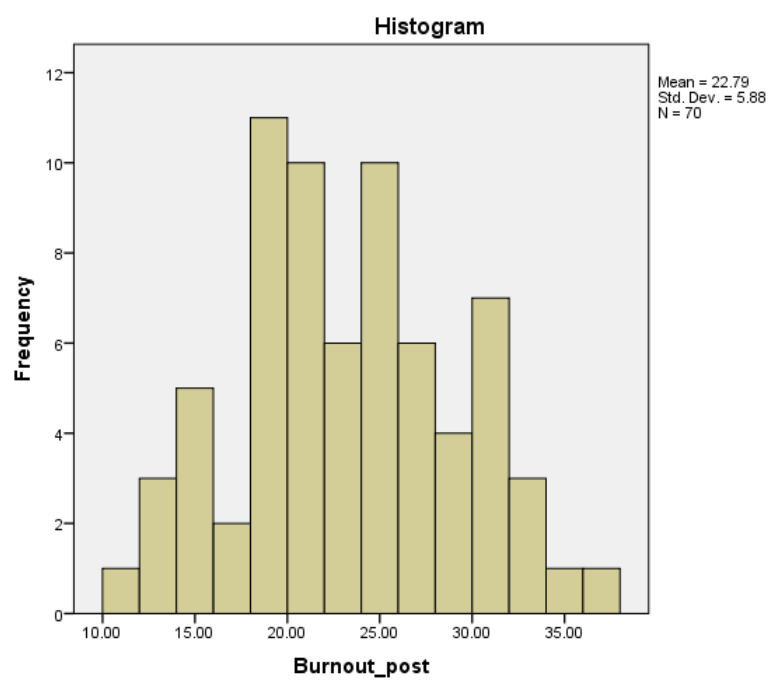
Work Setting		<i>M</i>	<i>SD</i>
med/surg/oncology/radiology	Compassion satisfaction _diff	1.48	4.77
	Burnout_diff	.13	6.13
	SecondaryTrauma_diff	-.84	6.26
Education/Pre-anesthesia/OR/PACU	Compassion satisfaction _diff	.92	4.21
	Burnout_diff	-1.85	2.67
	SecondaryTrauma_diff	-1.77	5.51
ED/Peds/Obstetrics	Compassion satisfaction _diff	.31	2.95
	Burnout_diff	-.85	2.57
	SecondaryTrauma_diff	.77	2.64

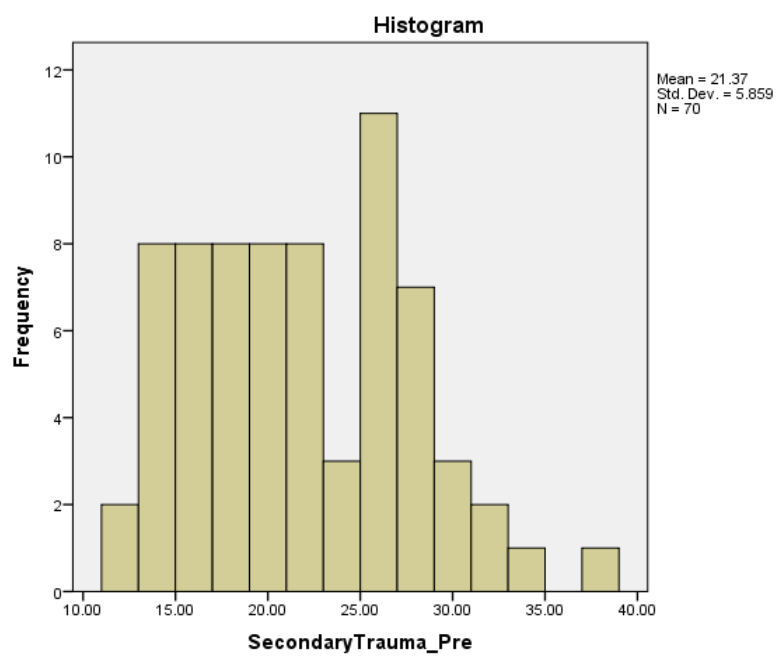
Visual inspection of histograms also supports approximate normality of pre and post-measures (Figures 1 through 6).

Manuscript 2 Figure 3*Histogram of Compassion Satisfaction Scores (Pre)*

Manuscript 2 Figure 4*Histogram of Compassion Satisfaction Scores (Post)*

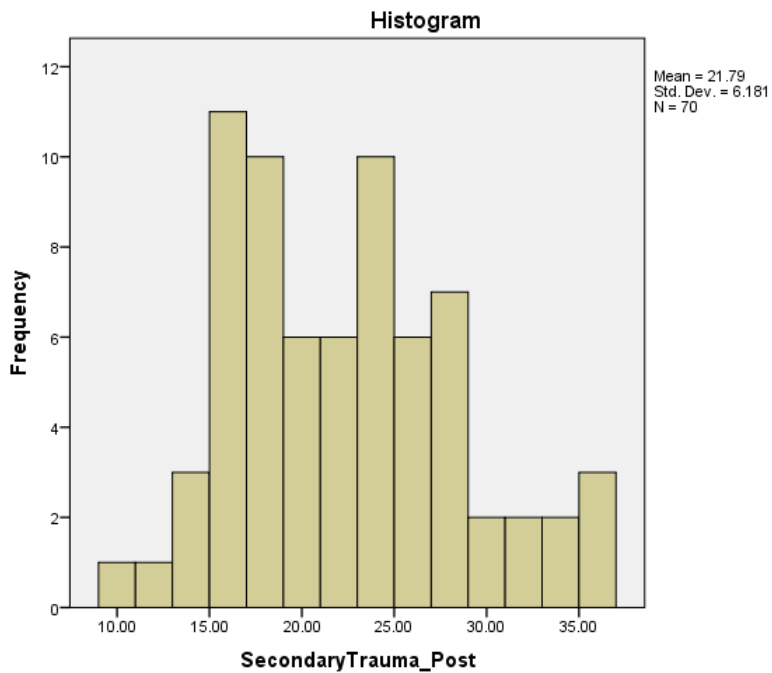
Manuscript 2 Figure 5*Histogram of Burnout Scores (Pre)*

Manuscript 2 Figure 6*Histogram of Burnout Scores (Post)*

Manuscript 2 Figure 7*Histogram of Secondary Trauma Scores (Pre)*

Manuscript 2 Figure 8

Histogram of Secondary Trauma Scores (Post)



There were no standardized scores that were outside -3 to +3 standard deviations, thus there were no outliers in the measures scales (see Table 11)

Manuscript 2 Table 11

Multivariate Tests RQ1

Effect		Λ	F	Hypothesis df	Error df	<i>p</i>
Between Subjects	Intercept					
	Wilks' Lambda	.003	8596.860 ^b	3.000	67.000	.000
Within Subjects	time					
	Wilks' Lambda	.948	1.232 ^b	3.000	67.000	.305

MANOVA was conducted to address this second research question and hypotheses:

RQ 2: What effect does an educational session on CF, STS, CS, and burnout have on nurses by years of experience who work in an acute care facility?

H₀1: There will be no effect on the level of CF, STS, CS, and burnout by years of experience in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

H_A1: There will be an effect on the level of, CF, STS, CS, and burnout by years of experience in registered nurses who work in an acute care facility who will experience an educational session on mindfulness.

I used MANOVA to analyze the data for my research questions, rather than a *t* test as I had planned because MANOVA allowed analysis of the three dependent variables: CS, BO, and STS. I tested the assumptions of MANOVA which include: 1) that the observations were randomly and independently sampled from the population of the RN's; 2) each dependent variable had an interval measurement; 3) the dependent variables were multivariate normally distributed within each group of the independent variable (education session which is a categorical variable); 4) there was absence of multivariate outliers and multicollinearity; 5) there was linearity and equality of covariance matrices. The differences between pre and post-scores based on years of work experience (6 groups) on the combined dependent variables of compassion satisfaction, burnout, and secondary trauma were not statistically significant, $F(15, 171) = 1.232, p = .135$; Wilks' Λ

= .721. Additionally, there were no significant differences in pre and post scores, $F(3, 62) = 0.363, p = .780$; Wilks' $\Lambda = .983$ (see Table 12). Therefore, the null hypothesis was retained.

Manuscript 2 Table 12

Multivariate Tests RQ2

Effect			Λ	F	Hypothesis df	Error df	p
Between Subjects	Intercept	Wilks' Lambda	.004	5597.358 ^b	3.000	62.000	.000
	experience	Wilks' Lambda	.721	1.438	15.000	171.556	.135
Within Subjects	time	Wilks' Lambda	.983	.363 ^b	3.000	62.000	.780
	time * experience	Wilks' Lambda	.821	.846	15.000	171.556	.626

Discussion

Interpretation

As experienced nurses have had more exposure to stressful situations it is hypothesized that they have higher coping skills in reducing CF, BO and STS when faced by stressful situations. By educating the experienced nurse how to recognize the symptoms of CF, STS, and BO with mindfulness, nurses; levels of psychological and physiological levels may not reach a level of BO which may cause them to leave the profession (Straus, et al.,

2021). A quasi-experimental pilot study by Copeland (2020) introduced nurses to a 5-minute MBI which showed that BO was increased in the journaling group but that the participants wanted further education on MBI's. However, Copeland (2020) found that 5-minute MBI conducted over a 6 week period had an effect on the levels of BO, CF and perceptions of teamwork in a group of nurses. In contrast, a meta-analysis by Kang and Myung (2021) found that nine randomized controlled trials (RCT's) that involved 572 nurse participants being taught MBI's. The study found that although the MBI's slightly improved psychological wellbeing, resilience, or quality of life in the nurse, however there was no significant effects found in job related outcomes.

My study revealed that the mindfulness education session provided at an acute care facility had no effect on the levels of CF, BO, and STS for the experienced nurse which supported the results of Kang, et al., (2021). The findings did not support that the education session on mindfulness contributed to increased levels of CS in the experienced nurse. There are no other reported studies that have used this format for mindfulness education as of 2021 in the nursing literature. Sarazine et al., (2021) found that mindfulness workshops conducted over a period of 6 months had a slight effect on mindfulness skills, personal accomplishment, and depersonalization in nurses. Although the results of my study did not suggest that levels of CT, BO and STS contributed to a rise in CS in the experienced nurse in an acute care facility, the perceptions of nurses to

mindfulness interventions and the potential effect on reducing CF, BO and STS have implications on patient outcomes and as represented in the CS-CF model (Stamm, 2009).

Limitations

My study presented several limitations. Sample size was a limitation of this study.

Although I did meet the sample size for my power analysis, my results are not generalizable to other RN groups. Difficulty recruiting participants was partly due to the COVID-19 pandemic. Another limitation was that this study was carried out at one study site and therefore not representative of RN's at other facilities. First the correlational design was not ideal for illustrating the effectiveness of a mindfulness education session on the levels of CF, BO and STS in the experienced nurse (Cohen, 1992).

Implications

The findings of my study did not indicate that there was less CF, BO, STS and increased levels of CS in the experienced nurse after the MBI. CF is a complex issue in nursing that have many variables for nurses to consider. CF, BO and STS have been a long-term, well-known problem and safety concern among healthcare providers and healthcare facilities (Kang et al., 2021; Sarazine et al., 2021). Researchers have determined that there are significant gaps in knowledge in about the effects that CF, BO, and STS and the use of MBIs in their duration, format and their importance to patient outcomes (Bianchinni & Copeland, 2021; Jun et al., 2020).

Experienced nurses who have had repeated exposure to high stress in the workplace have been presented with multiple options in evidence-based MBI to reduce C, BO and STS and raise CS levels (Labrague, 2020; Suleiman, et al., 2020). As the climate of nursing continuously evolves and changes, there is high demand for increased care which leads to high stress in the nurse population. High stress has been linked to feelings of dissatisfaction in the experienced nurse which leads to the nurse feeling ill equipped to perform their job which leads to CF, STS and BO and may cause the nurse to leave the workplace (Hayward, et al. , 2016; Kelly, 2020). When experienced nurses leave the workplace, less experienced nurses are exposed to situations that they have not previously encountered and may result in inadequate care that may have detrimental outcomes for the patients under their care. Inexperienced nurses have been shown to have difficulties in recognizing sepsis, deteriorations in a patient's status, and deficits in utilizing critical thinking skills that the experienced nurse has had time to develop which could have significant health consequences for the patient if not caught early in a health crisis (Harley, et al., 2019).

This study has implications for nurse education. Even though the results of my study indicated that mindfulness interventions did not reduce CF, BO and STS in the acute care nurse, the format of the education process needs to be further explored and expanded upon. My study contributes to the literature because I used the Netlearning education

online program which is an alternative format and method of introducing mindfulness education.

Recommendations

Future studies could focus on the implementation of Mindfulness techniques during the orientation phase of a nurses' introduction to the work environment and also during the precepting stage. However, as the length and duration of a Mindfulness program have not been established in nursing literature at this time. MBIs have been conducted over 4 weeks to 6 months with different formats of instruction varying from deep breathing exercises, journaling, yoga, meditation, webcam podcasts, in-person classes. Further research would need to be carried out using varying program lengths of MBI to establish what length of program would assist the nurse in reducing CF, BO, STS and elevating levels of CS. My study used the Netlearning format where the participants were given an education session on MBIs to practice at home and in the work environment. Therefore, a study comparing the Netlearning format and online learning would be warranted. Other methods of mindfulness education such as meditation and 5-minute exercises could be more useful in the work setting (Copeland, 2020; Kang et al., 2021., & Sarazine et al., 2021).

Conclusion

Mindfulness training and techniques can be used to reduce the number of nurses leaving the world of nursing and can be used to identify why nurses suffer from CF, BO and STS.

The nurses who participated in the study did so in the middle of the COVID-19 pandemic when nursing stress was increased due to the pandemic and ever evolving changes in nurse practice according to CDC guidelines. The nurses who participated in the study ($n=70$) showed that the introduction of a mindfulness education session via the Netlearning format did not have any effect on CF, BO and STS or raised CS in the nurses in the acute care facility. A MANOVA test was conducted to compare the effects of the mindfulness education session on CF, BO, STS and CS. There was no significant difference in the levels of CF, BO, STS in the RN's at the acute care facility. Future research in the development and implementation of Mindfulness education via the Netlearning format is indicated to determine the effectiveness of Mindfulness education in reducing CF, BO, and STS and raising levels of CS in experienced nurses working in an acute care facility.

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**Effect of Mindfulness Techniques on Compassion Satisfaction on Nurses by Clinical
Areas**

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Outlet for Manuscript

The target journal for this manuscript is the Journal of Nursing Care Quality (JNCQ). JNCQ is a peer-reviewed journal that encourages submissions of original research, including manuscripts that offer applicable and resourceful knowledge related to patient safety and the application of quality improvement principles across various clinical settings (JNCQ; <http://edmgr.ovid.com>). JNCQ accepts manuscripts formatted to the American Medical Association (AMA) Manual (10th edition). The recurrent safety issue related to patient falls, an emerging nursing behavior, learned helplessness, and the possible implications to nursing practice and patient outcomes are the focus of this manuscript. The content presented represents discussion relevant to the promotion of clinical quality and safety outcomes and aligns with the JNCQ's mission to support the promotion of new nursing knowledge.

Abstract

Purpose: To determine the effect of an educational session on mindfulness on secondary traumatic stress (STS), burnout (BO), and (compassion satisfaction) CS in registered nurses (RNs) who worked in five clinical areas in an acute care facility.

Methods: Seventy RNs took an online session on mindfulness training and completed the ProQOL version 5 assessment tool to measure changes in CF, STS, and BO.

Results: The differences between pre and post-scores based on work setting on the combined dependent variables of CS, BO, and STS were significant ($p = .003$). However, there were no significant differences between pre and post scores, ($p = .382$).

Conclusion: Education on CF that is applicable to an RN's clinical area is essential so that the RN will be able to develop coping techniques to deal with situations in their clinical area to reduce CF, STS and BO.

Introduction

Compassion fatigue is a phenomenon that has been investigated by many different researchers for many different care professionals. Investigation of CF for nurses was first investigated by Joinson in 1992 and there have been many studies that have investigated the effects that CF, STS and BO has on nurses in many different specialties (Kelly, et al., 2015; Kelly 2020; O’Callaghan, 2020). Compassion fatigue is described by Coetzee and Klopper (2010) as the emotional, physical, social, intellectual, and spiritual changes that occur with nurses’ progressive exposure to stress and patient-interactions. Compassion fatigue is also defined as a disorder in which a nurse or other caregiver demonstrates feelings of fatigue, lack of empathy, and an accompanied depressed mood in relationship to work (Stamm, 2002). CF refers to the emotional and physical exhaustion that can affect professionals and caregivers over time and has been associated with a gradual desensitization to patient stories and a decrease in quality care for patients and clients. CF is associated with an increase in clinical errors, higher rates of depression and anxiety disorders, and a rise in stress levels in the workplace climate. Increased stress levels in the nurse are linked to increased rates of stress in the household, divorce, and social isolation (Figley Institute, 2012; Gustafsson et al., 2021).

Secondary traumatic stress (STS) is a specific type of compassion fatigue that occurs as nurses are exposed to others’ suffering or traumatic events (Coetzee & Klopper, 2010) may lead towards burnout (BO) (Joinson, 1992; Stamm, 2010). Burnout is ‘associated

with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively' (Stamm, 2010:13). Stamm (2010) further defined burnout as being a syndrome composed of emotional exhaustion, depersonalization, and reduction of personal accomplishments.' Nurses who work in critical areas have been shown to be affected by mental and physical exhaustion due to being exposed to increasingly sicker patients, high stress situations and increased work demands (Alharbi, et al., 2020; MacKusick & Minick, 2010). CF, STS and BO has been shown to be present in nurses working in acute care medical/ surgical; intensive care units; trauma units; pediatric units; procedural units; critical care units; emergency departments; palliative care; and labor and delivery units (Beck & Gable, 2012; Branch & Klinkenberg, 2015; Hinderer et al., 2014; Hunsaker, et al., 2015; Kelly et al., 2015; Meyer et al., 2015; Sansó et al., 2015; Xie, et al., 2021). The common symptoms experienced by nurses in different clinical areas range from a decrease in spiritual fulfilment, disconnectedness from patient engagement, feelings of helplessness related to unrelenting sacrifice of the self and prolonged exposure to trauma (Gustafsson et al., 2021; Harris & Griffin, 2015; Labrague et al., 2021). These symptoms may progress to STS and BO with the nurse eventually leaving the nursing profession due to the escalation of emotional and physical symptoms, which in turn leads to psychological problems (Cao & Chen, 2021; Shepard, 2015; Stam, 2015). These symptoms may progress to low morale, physical and emotional exhaustion, impaired job performance, absenteeism which may lead to decreased nurse retention as the nurse

leaves the profession to eliminate the symptoms of CF in their life (Cao et al., 2021; MacKusick & Minick, 2010).

Literature Search

I conducted a literature review using electronic databases and search engines accessible from the Cochrane Library and Walden University Library, CINAHL, Medscape, Nursingworld.org, and Google Scholar. Other sources included online e-books, hand-picked articles, and peer-reviewed journals. The information included in this research was derived from research studies that were conducted between 1992-2021. Key search terms included: *compassion fatigue*, *compassion fatigue in nurses*, *secondary traumatic stress disorder*, *compassion satisfaction*, and *burnout*. Additional search terms included: *patient satisfaction*, *nurse fatigue*, *emotional exhaustion*, *self-care*, *mindfulness techniques*, *education*, and *self-awareness*. The results of the research are synthesized below and include, compassion fatigue, burnout, depersonalization, the impact of health care providers leaving the healthcare profession, compassion satisfaction, and current practices to reduce CF in nurses.

Significance/Importance

Research studies have shown that when nurses leave the profession that this affects patients access to care, patient safety, and a decrease in the quality of care given to the patients which may lead to adverse outcomes (Anderson, 2020; Duffield, et al , 2014; Jun, et al, 2021; Labrague et al., 2021). Nurse turnover also influences increased

workload for the remaining RN's which causes higher levels of stress on the RN to provide appropriate care (Labrague, et al., 2021). Lack of appropriate staffing in the health care environment also increases the risk of workplace injury which may cause nurses to leave the profession (Copeland, 2021). As nurses leave the profession this also has an impact on health care organizations which leads to higher recruitment and replacement costs (Jun, et al., 2021; Mazurenko, et al. 2015). If nurses are leaving due to CF, STS, and BO there needs to be effective measures taken to prevent further nursing shortages which could be detrimental to patient care. Therefore, it is important to implement stress relieving strategies such as Mindfulness- Based Interventions to help reduce levels of CF, STS, BO in nurses and to increase the nurses compassion satisfaction to prevent that nurse leaving the workforce.

Relevant Scholarship

Mindfulness based interventions (MBI) have been shown to have an impact on healthcare professionals' health and wellness (Kang & Yeung, 2020). Research has found that participation in MBI's has benefits in general and mental health. The benefits include- reduced stress, depression, anxiety, and BO levels in nurses (Jun et al., 2020). Improved self-compassion, mindfulness, physician empathy, sense of coherence, and satisfaction with life are shown to have huge impacts on nurse retention (Jun et al., 2020). Meta-analysis studies in a wide range of clinical populations by Grossman, et al. (2004) ; and Jun et al., (2020) found that when mindfulness-based stress reduction education was

given, there were improvements in levels of depression, anxiety, coping style and in quality of life measures. An increase in nurses' states of mindfulness and patient's satisfaction was reported by Saban, Dragan & Drach-Zahavy (2020), when a mindfulness-based time-out intervention was introduced into an emergency department. The researchers introduced an MBI into practice for 48 nurses who had a patient assignment of 20 patients. By using mindfulness-based interventions the researchers found that the nurses had an increased state of mindfulness and patient satisfaction scores rose.

MBI programs traditionally are held over a several weeks and have been shown to be effective on CF, STS, and BO, and to increase CS in the nurse. Bianchini and Copeland (2021) found in three pilot study units that with the introduction of MBIs over 3 months, overall perceived stress scores decreased. There was only one study that have showed that MBI programs conducted over a four-week period have been effective for reducing BO using relaxation techniques that aid in increasing life-satisfaction in the nurse (MacKenzie, et al., 2006). A 6-week mindfulness-based group intervention for oncology nurses by Duarte and Pinto-Gouveia (2016), found that there was evidence that mindfulness-based interventions were efficacious in reducing the oncology nurses' psychological symptoms and improved their well-being but that there were mixed results in the amount of CS achieved by the study participants. In a study by Talebi (2021), 60 nurses were assigned into a control and test group and taught meditation as an MBI. The

study found although the mean of mindfulness and happiness for both groups increased in the post test phase but that it was higher in the experimental group. However, the meditation exercises introduced by the researcher had no significant effect on anxiety but significantly increased happiness in the experimental group.

It is essential that further studies are performed to examine the effectiveness of MBI education sessions and their effectiveness on reducing levels of CF, STS, BO and in raising CS levels in nurses.

Theoretical Framework

Figley (2002) recognized that CF may develop as a result of a caregiver's exposure to a patient's experiences which then joins with that caregiver's natural empathy and may cause distress to the caregiver. The CS-CF (Compassion Satisfaction- Compassion Fatigue) model shows a theoretical path analysis of the positive outcomes (CS) and negative outcomes (CF) a caregiver may encounter while helping patients who have experienced traumatic stress (Hunsake, et al., 2015). Three specific environments are associated with the development of CF and CS: the work environment, client/persons helped environment and personal environment which cause both the positive and negative aspects of caring for others.

The theoretical Model of Compassion Satisfaction and Compassion Fatigue was designed by Stamm (2010) to show how three environments in a person's life are connected to the positive and negative aspects of helping others. The environments are described as being-

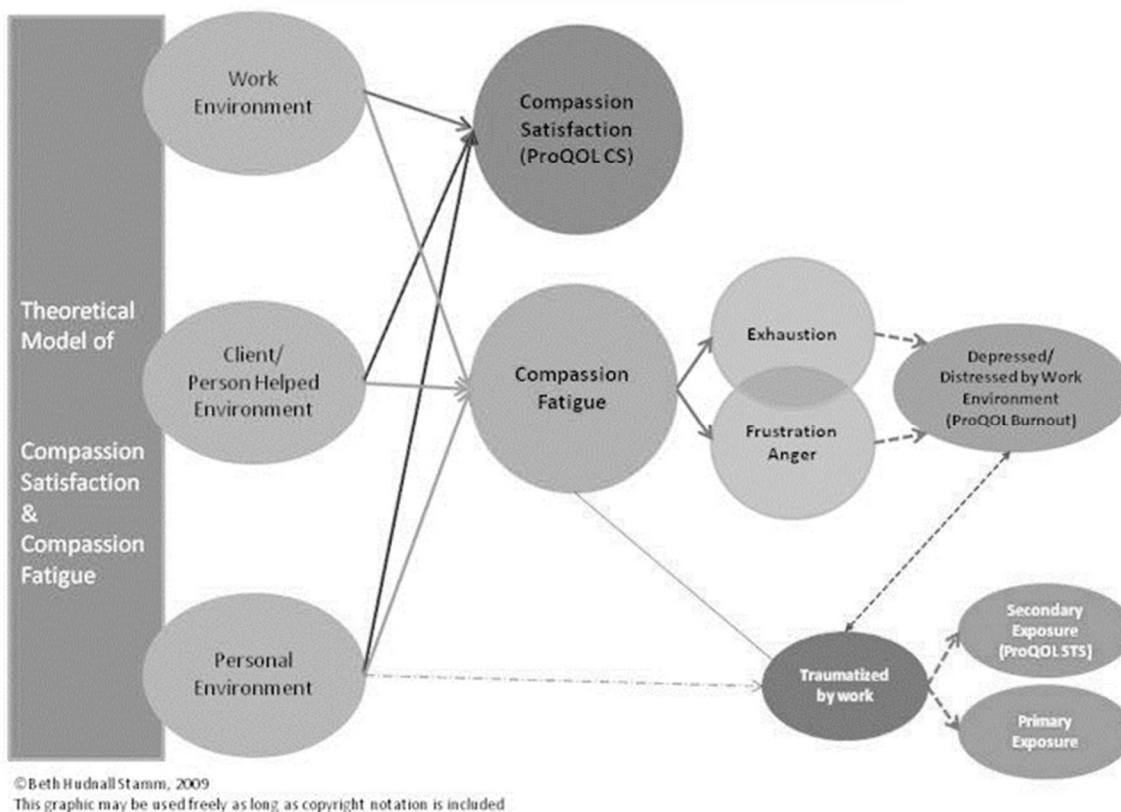
the actual work situation itself, the environment of the person or people with whom that person is providing care or assistance and the personal environment that that person brings to work.

Figure 1 illustrates the elements of Professional Quality of Life with the central components of CS and CF. CS is the positive aspect of helping others such as in the nursing profession, and CF is the negative aspect of caring for others. This is a consequence of caring for others and being exposed to increasingly sicker patients, increased work demands and traumatic situations where the nurse is exposed to the pain, suffering and the death of a patient. A nurse may work in a poor environment which causes CF but still derive CS that they are helping others despite the poor environment. Work-related trauma is described by Stamm (2010) as having a distinctive aspect of fear associated with it, which although being a rare complication experienced by the nurse, is what develops into BO which can have a very powerful effect on a person. When BO and trauma are present in a nurse's life, life can become very difficult and overwhelming not only in their work environment but also their home life. The nurse may experience feelings of dread about work, have mental and physical exhaustion, sleep issues, and depression which may cause nurses to disengage from the patients they care for and from their own family. Nurses who are suffering from BO may be less motivated and may experience lower cognitive functioning due to emotional exhaustion which could put

patients at risk of urinary tract infections, falls and surgical site infections (Cimmotti, Aiken, Sloane, & Wu, 2012; Steinheiser., et al, 2020).

Manuscript 3 Figure 1

Model of Compassion Satisfaction and Compassion Fatigue



From ProQOL Manual by B. Stamm, 2009, *The Concise Manual for the Professional Quality of Life Scale*, p. 11 <https://doi.org/proqol.org/proqol-manual>

This research study will make a positive contribution to the ongoing research on CF, STS, CS and BO as it will provide information to nurse educators, nurse managers and nurses about the effect of how a Mindfulness session could reduce CF, STS and its

development into BO and raise CS. This study investigated whether teaching Mindfulness technique to nurses who worked in different clinical areas in an acute care facility had an effect on increasing their awareness of CF, STS and its progression to BO, and the methods that can increase levels of CS in the nurse and hopefully prevent that nurse experiencing CF, STS and BO.

Research Question and Design

RQ 1: What effect does an educational session on mindfulness have on CF, STS, burnout and CS in registered nurses who work in five clinical areas in an acute care facility?

HO1: There will be no difference in the level of CF, STS, CS and burnout in registered nurses who experience an educational session on mindfulness in five clinical areas in an acute care facility.

H_A1: There will be a difference in the level of CF, STS, CS and burnout in registered nurses who experience an educational session on mindfulness in five clinical area in an acute care facility.

Nature of the Study and Design

I conducted a quantitative, quasi-experimental one group pre- test, post- test design using a group of registered nurses in an acute care facility, and was guided by the Compassion Satisfaction and Compassion Fatigue Model (CS-CF) (Stamm, 2010). For the study, the independent variable was an educational session on mindfulness. The dependent variables studied were STS, BO and CS (see Appendix A). Demographic data were used

as identifying markers - gender (male/female); job status (work commitment- full or part-time); race/ethnicity, education (highest education level); age in years; experience as an RN (years); setting (specialty practice area); time on the unit (years); and certification (professional). The results from this study may be helpful to RNs so they can develop an understanding of mindfulness techniques to reduce STS, BO and raise CS levels which will increase job satisfaction and improve nurse retention and patient safety.

Methods

Population

The target population for this study were RNs who worked in all areas of nursing that provided patient care in an acute care facility.

Sample and Power

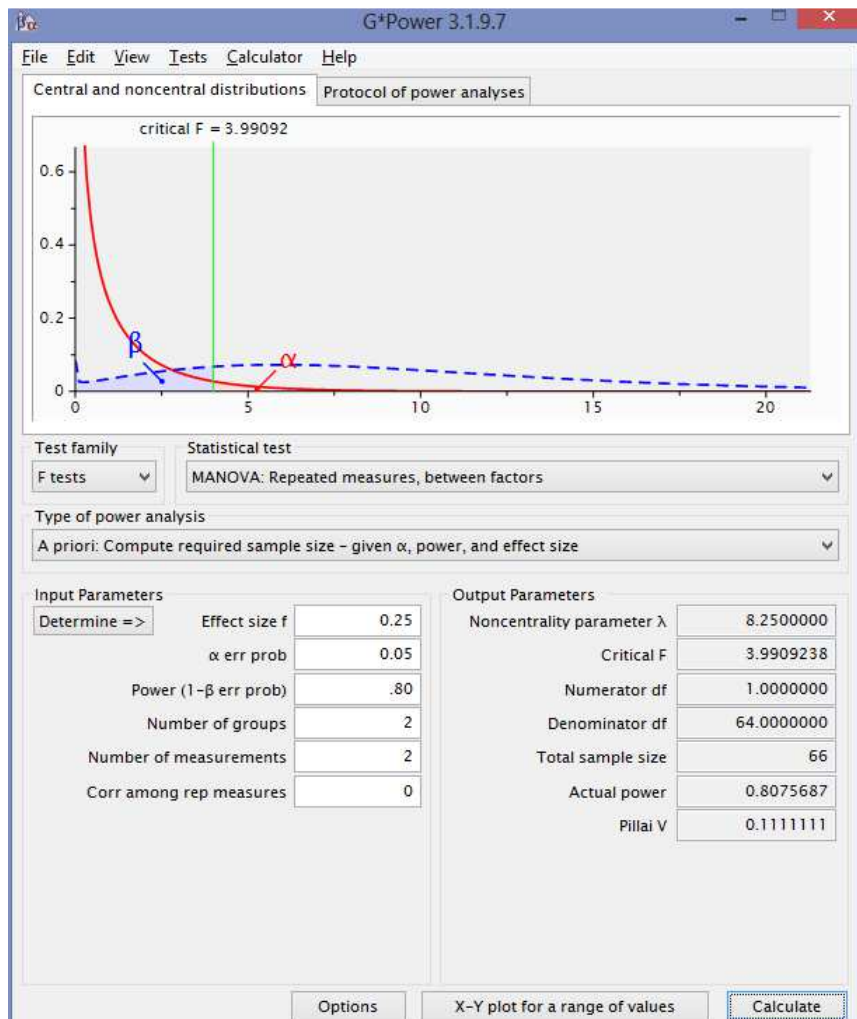
A non-probability, convenience sample was used. The inclusion criteria were 1) a registered nurse who worked at least 36 hours per week in the facility, 2) interacted daily with patients for at least 36 hours per week, and 3) had at least one year experience as a bedside nurse. The rationale for including a minimum of at least one year's experience as a nurse and working 36 hours per week at the bedside was that the nurses participating in the study would have had experience in patient care and would have been exposed to enough traumatic events that contribute to the development of CF, STS and BO.

A priori power analysis was conducted using G*Power to determine the required minimum sample size for the study (Faul et al., 2009). Four factors were considered in

the power analysis: significance level, effect size, the power of the test, and statistical technique. The significance level, also known as Type I error, refers to the chance of rejecting a null hypothesis given that it is true (Haas, 2012). Most quantitative studies make use of a 95% confidence level because it adequately provides enough statistical evidence of a test (Creswell & Poth, 2017). The effect size refers to the estimated measurement of the relationship between the variables being considered (Cohen, 1988). Cohen (1988) categorizes effect size into small, medium, and large. Berger, et al. (2013) purported that a medium effect size is better as it strikes a balance between being too strict (small) and too lenient (large). The power of test refers to the probability of correctly rejecting a null hypothesis (Sullivan & Feinn, 2012). In most quantitative studies, an 80% power is usually used (Sullivan, & Feinn, 2012). The statistical test used for this study was repeated measures, between factors MANOVA. In order to conduct MANOVA to detect a medium effect size, at 5% level of significance, with 80% power, at least 66 participants were required (see Figure 2).

Manuscript 3 Figure 2

*G*Power*



Sources of Data

The study was a one group pre- test, post- test, quasi-experimental study conducted using a group of RNs who worked in a rural community hospital. Permission to conduct the research study was obtained from the hospital's IRB and Walden IRB (09-

04-20- 0618315). Prospective participants were invited to attend the education session via an email (Appendix C). The invitation and study details were disseminated via staff meetings/huddles. Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education. Quantitative data on the variables of CF, STS, BO and CS were collected through pre- and post- surveys from registered nurses in the acute care facility. The purpose and significance of the study, how the data would be used and a disclaimer that participation in the study was voluntary was sent to the registered nurses via an email (See Appendices C and D).

The demographic information included: gender (male/female), job status (work commitment: full or part time), race/ethnicity, education (highest education level), age in years, experience as an RN (years), setting (specialty practice area), time on unit (years), certification (professional) (see Appendix C,).

Data were stored on a password protected laptop, with a backup stored to a password protected cloud server, Microsoft OneDrive. Confidentiality and anonymity were maintained for all study participants. I keep the data secure using a password protected computer which will be backed up on a password-protected hard drive.

Instrumentation

Data were collected using the ProQOL Version 5 to measure the level of CF, STS, BO and CS. Permission to use Stamm's scale was obtained via standard permissions on the ProQOL website (Permission to Use ProQOL, 2019, see Appendix B). The ProQOL 5

consists of three subscales that are used to measure compassion satisfaction and compassion fatigue. Two of the subscales: burnout and secondary traumatic stress are components used to measure CF. The third subscale is compassion satisfaction. The ProQOL 5 is a 30-item self-report scale that uses a 5-point Likert scale scoring from 1= *never* to 5= *very often* (Stamm, 2010). This scale is the commonly used scale to measure the negative and positive effects of helping patients who have experienced suffering and trauma and the effects the patient's experiences have on nurses which may lead to CF and CS. The ProQOL scale has been extensively tested over many years, and has demonstrated reliability through α subscale reliabilities, respectively, of 0.80 for compassion fatigue, 0.87 for compassion satisfaction, and 0.72 for burnout (Stamm, 2010). The ProQOL scale has been tested for validity using the Rasch analysis procedure on each of the three subscales. Rasch measurement places importance on whether the data collected from an instrument's items provides the researcher with an invariant representation of an underlying ability or trait of interest (CF, STS, BO and CS). Rasch analysis transforms ordinal data into linear measures with equal-interval units called logits which are used to describe the measures of both individuals and items (Boone, Staver & Yale, 2014). Rasch analysis allows for comparison of a person to other individuals using the items in the measurement scale (Peixoto Souza et al., 2017). Using the ProQOL 5 assessment tool, measured the characterization of the levels of CS, BO and

CF in the participants so I could compare nursing specialty, gender, and other personal/professional demographic factors (Appendix A).

Design and Analysis

The independent variable was an educational program on mindfulness produced by the facility delivered through the Netlearning system that the facility used for education. The educational program on mindfulness which can decrease CF, STS, BO and increase CS levels in RN's who work in acute care facilities. This design was chosen as it allows measurement of CF, STS, BO and CS prior to the session and following the session in a field setting such as an acute care hospital due to difficulties in random assignment of the educational session on mindfulness. The dependent variables pre and post session were measured using the Likert scale that allows data collection using the ProQOL Version 5 survey. Likert scales that use sums are interval (Norman, 2010). The use of a 5 or 7 point scale like the Likert scale allows the researcher less chance of departing from intervalness (where there is a departure from the assumption of normal distribution due to fewer numbers of points on the scale) which could have an effect of a Type I or Type II error occurring (Simon & Goes, 2013). Using this method if the average post-test score is better than the average pre-test score, the researcher can conclude that the education session on mindfulness techniques may be responsible for the improvement (Van der Reit, et al., 2018).

The data were analyzed using Statistical Package for Social Sciences (SPSS Version 27). I planned on using a paired sample t -test to determine if the educational session would affect the level of CF, STS, BO and CS in a group of Registered Nurses in the acute care facility. The pre and post-test questionnaires was matched using unique identifiers. Quantitative analysis was applied to the research question.

Data were screened for missing and outlier responses and included a review of all demographic information. Descriptive statistics were calculated for all variables.

Recruitment and Data Collection

The target population of the study was registered nurses (RN's) who worked in all areas of nursing that provided patient care in an acute care facility. A non-probability, convenience sample was used (Burkholder et al., 2012). The inclusion criteria for participants were: (a) a registered nurse who worked at least 36 hours per week in the facility, (b) interacted daily with patients for at least 36 hours per week, and (c) had at least one year of experience as a bedside nurse. The study was a one-group pre- test, post-test, study conducted using a group of nurses in a rural community hospital and was available for completion for 14 months. The invitation and study details were disseminated via staff meetings/huddles which was initially commenced in September 2020 and later reimplemented to meet the target number of sample participants (66) which was reached in November 2021. Interested RN's had the opportunity to register via the Netlearning program the facility uses for continuing education. The Netlearning

program approach was implemented due to the Covid 19 pandemic which caused restrictions on in-person education sessions in the facility. The ProQOL V has subscales for compassion satisfaction, burnout and secondary traumatic stress. This instrument was chosen as it has been shown to be a valid and reliable measure of CS, BO and STS (Stamm, 2010).

Quantitative data on the variables of compassion satisfaction, burnout, and secondary trauma were collected through pre- and post- surveys from registered nurses in the acute care facility. Additionally, demographic statistics on gender, age, years work experience, ethnicity, degree, and work setting were collected. There were a total of 110 nurses who initially participated in the study, however 20 respondents were excluded as they were part-time employees and the inclusion criteria was for full-time employees and twenty surveys were incomplete. There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were three (4.3%) that did not provide a response for gender (Table 1). The sample was representative from the group of RNs chosen to participate in the research study. The sample had the key variables of 1) a registered nurse who worked at least 36 hours per week and had at least one year's experience as a bedside nurse.

Results

Execution

Descriptive Statistics

There were 70 nurses that participated in the study and completed both the pre and post surveys. The sample included 8 (11.4%) males and 59 (84.3%) females. There were 3 (4.3%) that did not provide a response for gender (see Table 1). The sample was representative from the group of RN's chosen to participate in the study. The sample had the key variables of: (a) a registered nurse who worked at least 36 hours per week in the facility, (b) interacted daily with patients for at least 36 hours per week and, (c) had at least one year's experience as a bedside nurse.

The following table shows the demographic details of the sample population.

Manuscript 3 Table 1

Gender

Gender	Frequency	Percent
Male	8	11.4
Female	59	84.3
Total	67	95.7
No response	3	4.3
Total	70	100.0

Ages ranged from 18 to 70 years with most people between the ages of 51-60, 21 (30.0%). This was followed by 31-40, 16 (22.9%); 41-50, 15 (21.4%); 18-30, 11 (15.7%); and 61-70, 7 (10.0%) (see Table 2).

Manuscript 3 Table 2*Age*

Age	Frequency	Percent
18-30	11	15.7
31-40	16	22.9
41-50	15	21.4
51-60	21	30.0
61-70	7	10.0
Total	70	100.0

Most nurses were White, 52 (74.3%). This was followed by Asian, 7 (10.0%); Hispanic, 3 (4.3%); Black/African American, 2 (2.9%); and some other race, 1 (1.4%) (see Table 3).

Manuscript 3 Table 3*Ethnicity*

Ethnicity	Frequency	Percent
Asian	7	10.0
Black/African American	2	2.9
White	52	74.3
Hispanic	3	4.3
Other	1	1.4
Total	65	92.9
Prefer not to Answer	5	7.1
Total	70	100.0

Most participants had between 21 and 30 years of experience, 23 (32.9%) followed by participants with 11-20 years of experience (see Table 4).

Manuscript 3 Table 4*Experience*

Experience	Frequency	Percent
0-2	12	17.1
3-5	14	20.0
6-10	3	4.3
11-20	13	18.6
21-30	23	32.9
31 and up	5	7.1
Total	70	100.0

Most nurses' highest education level was a Bachelor's degree, 36 (51.4%). This was followed by an Associate degree in nursing, 28 (40.0%), and an MSN, 6 (8.6%) (see Table 5).

Manuscript 3 Table 5*Degree*

Degree	Frequency	Percent
Associate	28	40.0
Bachelor	36	51.4
MSN	6	8.6
Total	70	100.0

Most RNs worked in Medicine/Surgical/Oncology/Radiology, 31 (44.3%) (see Table 6).

Manuscript 3 Table 6*Work Setting*

Work Setting	Frequency	Percent
Medicine/Surgical/Oncology/Radiology	31	44.3
Education/Pre-anesthesia/OR/PACU	13	18.6
ED/Peds/Obstetrics	26	37.1
Total	70	100.0

Data Analysis**Manuscript 3 Table 7***Reliability of Study Measures*

Measure	#Items	Cronbach's Alpha
Compassion satisfaction (pre)	10	.902
Compassion satisfaction (post)	10	.898
Burnout (pre)*	10	.861
Burnout (post)*	10	.842
Secondary trauma (pre)	10	.863
Secondary trauma (post)	10	.867

*Five items on the burnout scale were reverse coded

Overall measures of compassion satisfaction, and compassion fatigue as measured by burnout, and secondary trauma were formed by summing the responses of the corresponding items that comprised each measure. As a result, the possible range for each measure could be from 10 to 50. Pre and post-measures are provided in Table 7.

Manuscript 3 Table 8*Pre and Post Scores (N = 70)*

Pre and Post Scores (N = 70)	Minimum	Maximum	<i>M</i>	<i>SD</i>
Compassion Satisfaction (Pre)	26.00	50.00	40.14	5.36
Compassion Satisfaction (Post)	26.00	50.00	39.20	5.94
Burnout (Pre)	11.00	41.00	22.19	6.34
Burnout (Post)	11.00	36.00	22.79	5.88
Secondary Trauma (Pre)	12.00	37.00	21.37	5.86
Secondary Trauma (Post)	10.00	36.00	21.79	6.18

Compassion satisfaction decreased from pre ($M = 40.14$, $SD = 5.36$) to post ($M = 39.20$, $SD = 5.94$); Burnout increased from pre ($M = 22.19$, $SD = 6.34$) to post ($M = 22.79$, $SD = 5.88$); and secondary trauma increased from pre ($M = 21.37$, $SD = 5.86$) to post ($M = 21.79$, $SD = 6.18$).

Difference scores were calculated by subtracting post scores from pre scores (pre – post).

Positive differences signified a decrease in the measure whereas negative difference scores signify an increase from pre to post. The mean difference scores for compassion satisfaction ranged from -10 to 13 ($M = 0.94$, $SD = 4.05$), burnout difference scores ranged from -11 to 26 ($M = -0.60$, $SD = 4.53$), and secondary trauma difference scores ranged from -16 to 16 ($M = -0.41$, $SD = 5.08$). Table 8 provides this information.

Manuscript 3 Table 9*Mean Difference Scores (Pre-Post)*

Mean Difference Scores (Pre-Post)	Minimum	Maximum	<i>M</i>	<i>SD</i>
Compassion difference	-10.00	13.00	.94	4.05
Burnout difference	-11.00	26.00	-.60	4.53
Secondary Trauma difference	-16.00	16.00	-.41	5.08

Measurements of difference scores by years of experience were calculated (Table 4).

Regarding compassion satisfaction difference scores, the greatest increase in compassion satisfaction from pre to post was found in the 6-10 years' experience group with an average difference score of $M = -1.67$ ($SD = 2.52$). The negative sign indicated an increase in the measure from pre to post. The greatest decrease in the compassion satisfaction score was found in the 11-20 years' experience group with an average difference score of $M = 2.08$ ($SD = 5.20$). The positive difference signifies a decrease in compassion satisfaction scores from pre to post. Regarding the greatest increase in burnout was found in the 11-20 years group with a mean difference score of $M = -1.85$ ($SD = 4.30$). The greatest decrease in burnout was found in the 3-5 years' experience group with a mean difference score of $M = 2.07$ ($SD = 7.63$). Lastly, the greatest increase in secondary trauma was experienced in the 0-2 years group with a mean difference of $M = -2.42$ ($SD = 6.02$). The greatest decrease in secondary trauma was found in the 3-5 years group with a mean difference of $M = 1.21$ ($SD = 5.18$).

Measurements of difference scores by work setting are provided in Table 11. Each work setting showed a decrease in mean compassion satisfaction with the greatest decreases seen in the med/surg/oncology/radiology group with a mean difference score of $M = 1.48$ ($SD = 4.77$). There was a decrease in burnout in the med/surg/oncology/radiology ($M = 0.13$, $SD = 6.13$). The greatest increase in burnout was found in the Education/Pre-anesthesia/OR/PACU group with a mean difference score of $M = -1.85$ ($SD = 2.67$). The greatest increase in secondary trauma was found in the Education/Pre-anesthesia/OR/PACU group ($M = -1.77$, $SD = 5.51$). There was a decrease in secondary trauma in the ED/Peds/Obstetrics group ($M = 0.77$, $SD = 2.64$).

Manuscript 3 Table 10

Compassion, Burnout, and Secondary Trauma by Work Setting

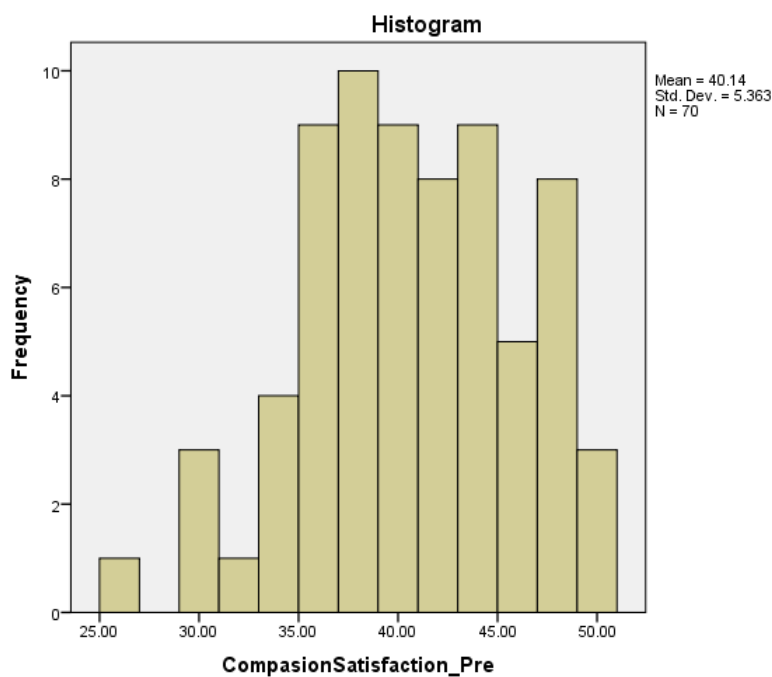
Work Setting		<i>M</i>	<i>SD</i>
med/surg/oncology/radiology	Compassion satisfaction _diff	1.48	4.77
	Burnout_diff	.13	6.13
	SecondaryTrauma_diff	-.84	6.26
Education/Pre-anesthesia/OR/PACU	Compassion satisfaction _diff	.92	4.21
	Burnout_diff	-1.85	2.67
	SecondaryTrauma_diff	-1.77	5.51
ED/Peds/Obstetrics	Compassion satisfaction _diff	.31	2.95
	Burnout_diff	-.85	2.57
	SecondaryTrauma_diff	.77	2.64

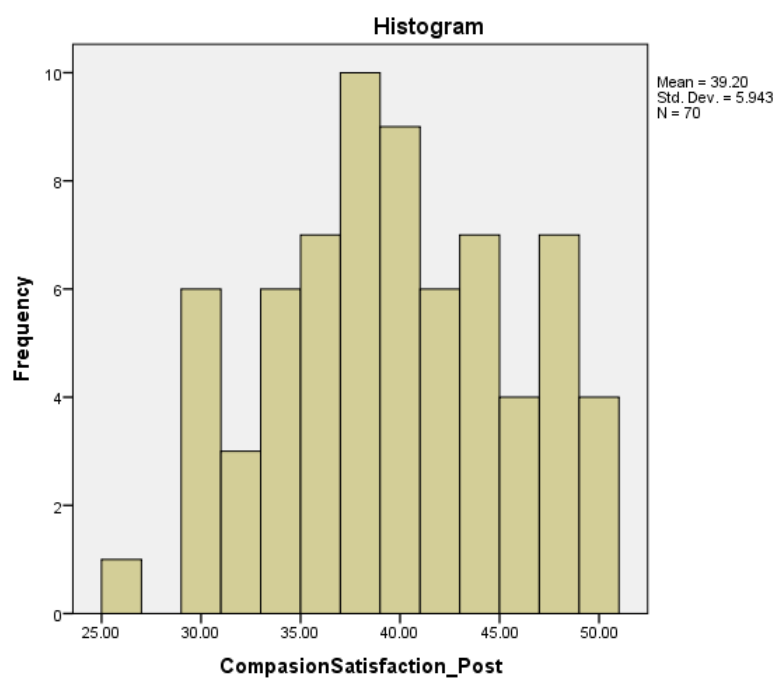
I used MANOVA to analyze the data for my research questions, rather than a t test as I had planned because MANOVA allowed analysis of the three dependent variables:

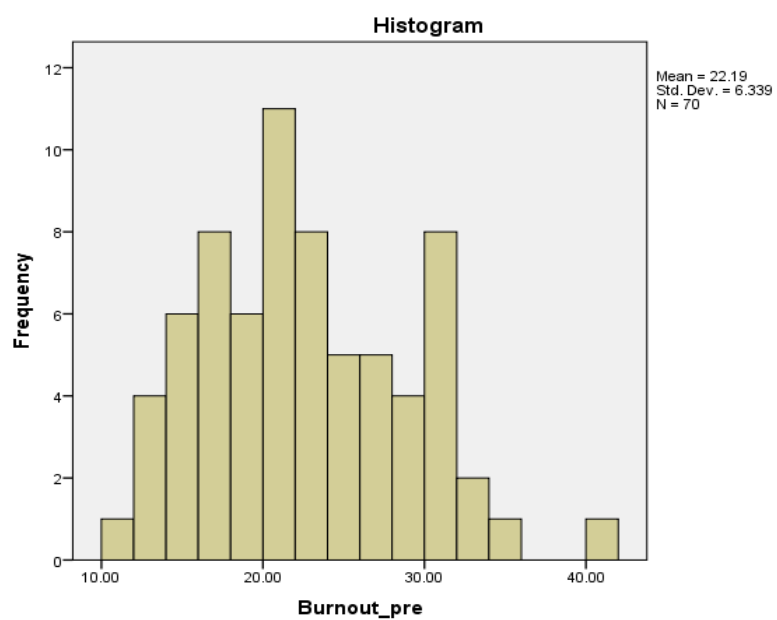
compassion satisfaction, burnout and secondary trauma. I tested the assumptions of MANOVA which include 1) that the observations were randomly and independently sampled from the population of the RN's; 2) each dependent variable had an interval measurement; 3) the dependent variables were multivariate normally distributed within each group of the independent variable (education session which is a categorical variable); 4) there was absence of multivariate outliers and multicollinearity; 5) there was linearity and equality of covariance matrices.

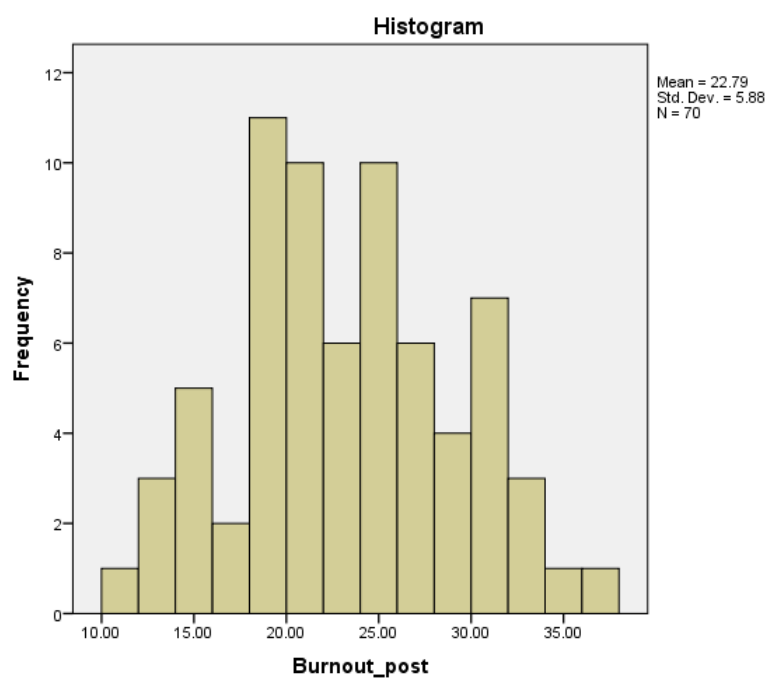
Manuscript 3 Figure 3

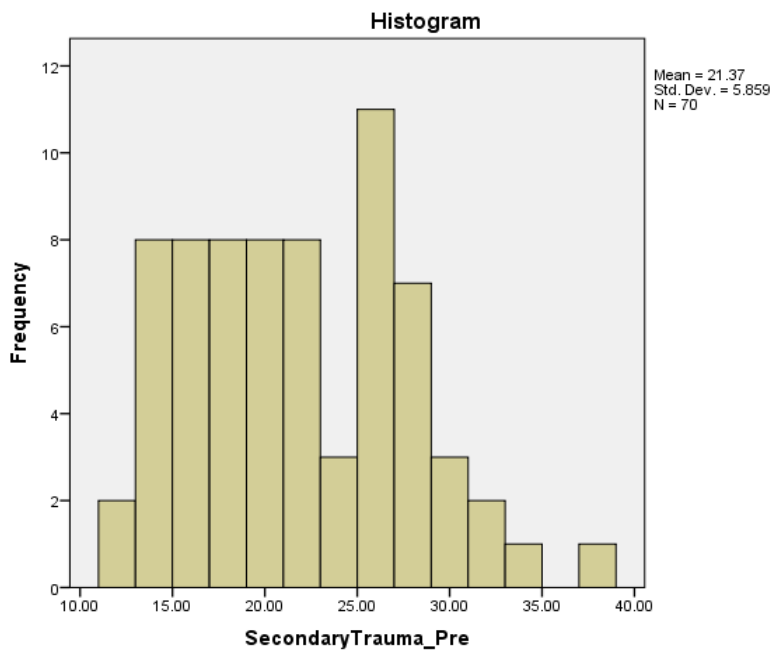
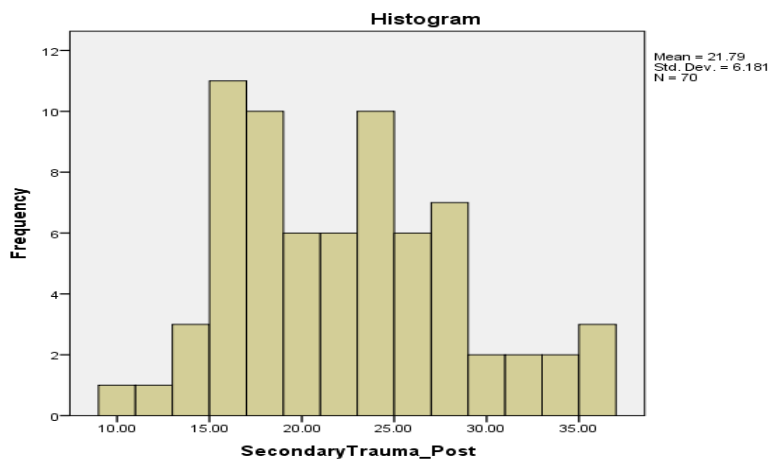
Histogram of Compassion Satisfaction Scores (Pre)



Manuscript 3 Figure 4*Histogram of Compassion Satisfaction Scores (Post)*

Manuscript 3 Figure 5*Histogram of Burnout Scores (Pre)*

Manuscript 3 Figure 6*Histogram of Burnout Scores (Post)*

Manuscript 3 Figure 7*Secondary Trauma Scores (Pre)***Manuscript 3 Figure 8***Secondary Trauma Score (Post)*

There were no standardized scores that were outside -3 to +3 standard deviations, thus there were no outliers in the measure's scales (see Table 11).

Manuscript 3 Table 11

Ranges of Standardized Values

<i>Ranges of Standardized Values</i>				
	Skewness		Kurtosis	
CompassionSatisfaction_Pre	-.260	.287	-.440	.566
CompassionSatisfaction_Post	-.022	.287	-.868	.566
Burnout_pre	.454	.287	-.228	.566
Burnout_post	.141	.287	-.621	.566
SecondaryTrauma_Pre	.323	.287	-.568	.566
SecondaryTrauma_Post	.412	.287	-.546	.566

These assumptions included a categorical level of measurement for the independent variable and two or more dependent variables measured at the interval level, independence of observations, normality of dependent variables within groups, no outliers, and homogeneity of variances (Field, 2015). The independent variables in this study were measured at the nominal level and there were three dependent variables measured at the interval level (compassion satisfaction, burnout, and secondary trauma). There was independence of observations due to the study design as there was no relationship between the observations in each group of the independent variable or between the groups themselves.

The skewness and kurtosis index were used to identify the normality of the data (see Table 12). The results suggested the deviation of data from normality was not severe as the value of skewness and kurtosis index was below 3 and 10 respectively (Kline, 2011). Hair et al. (2010) and Bryne (2010) stated that data are considered to be normal if skewness is between -2 to $+2$ and kurtosis is between -7 to $+7$.

Manuscript 3 Table 12

Skewness and Kurtosis Descriptive Statistics

Pre and Post Scores	Skewness		Kurtosis	
CompassionSatisfaction_Pre	-.260	.287	-.440	.566
CompassionSatisfaction_Post	-.022	.287	-.868	.566
Burnout_pre	.454	.287	-.228	.566
Burnout_post	.141	.287	-.621	.566
SecondaryTrauma_Pre	.323	.287	-.568	.566
SecondaryTrauma_Post	.412	.287	-.546	.566

The differences between pre and post-scores based on work setting on the combined dependent variables of compassion satisfaction, burnout, and secondary trauma were significant $F(6, 130) = 3.465, p = .003$; Wilks' $\Lambda = .743$. There was however, no significant difference between pre and post scores, $F(3, 65) = 1.038, p = .382$; Wilks' $\Lambda = .954$ (see Table 10). Therefore, the null hypothesis was retained.

Manuscript 3 Table 13*Multivariate Tests RQ1*

Effect	Λ	F	Hypothesis	dfError	df	<i>p</i>
Between SubjectsIntercept	Wilks' Lambda.0038596	860 ^b	3.000	67.000		.000
Within Subjects time	Wilks' Lambda.948	1.232 ^b	3.000	67.000		.305

Discussion

Nurses in five different clinical areas in an acute care hospital, like other healthcare professionals are exposed to stress whilst undertaking care of patients. This stress can lead to the development of CF, STS, BO and result in a fall in CS which may have detrimental effects on the patient's under their care (Ojeemeni, et al., 2021; Labrague et al., 2021). . Using the ProQOL scale, the levels of CF, STS, BO and CS were assessed. This study demonstrated that there were no significant changes in the levels of CF, STS, BO and CS following a mindfulness education session for nurses in five different clinical areas.

Interpretation

Mindfulness based interventions (MBI) have been shown to have an impact on healthcare professionals' health and wellness in different clinical areas. (Grossman et al., 2004). An increase in nurses' states of mindfulness and patient's satisfaction was reported by Saban, et al. (2020), when a mindfulness-based time-out intervention was introduced into an

emergency department. The researchers introduced an MBI into practice for 48 nurses who had a patient assignment of 20 patients. By using mindfulness based interventions the researchers found that the nurses had an increased state of mindfulness and patient satisfaction scores rose. In contrast, my findings did not support the results that the mindfulness education session caused a reduction in levels of CF, BO and STS as Burton et al (2016) and Labrague, et al (2021) found in their research studies and as represented in the CS-CF model (Stamm, 2009). Improved self-compassion, mindfulness, physician empathy, sense of coherence, and satisfaction with life are shown to have an impact on nurse retention and patient outcomes when MBI are implemented (Burton, et al., 2016; Labrague, et al., 2021).

Talebi (2021) found that meditation exercises had no significant effect on anxiety but significantly increased happiness in the experimental group. Therefore, there is conflicting evidence as to the benefits of MBIs in nurses who work in different clinical areas.

Limitations

Sample size was a limitation of this study. Although I did meet the sample size for my power analysis, my results are not generalizable to other RN groups. Difficulty recruiting participants was partly due to the COVID-19 pandemic occurring. Another limitation was that this study was only carried out at one study site and therefore not representative of RN's at other facilities.

Implications

High stress has been linked to feelings of dissatisfaction in the experienced nurse which leads to the nurse feeling ill equipped to perform their job which leads to CF, STS and BO and may cause the nurse to leave the workplace (Kelly, 2020). When experienced nurses leave the workplace, less experienced nurses are exposed to situations that they have not previously encountered and may result in inadequate care that may have detrimental outcomes for the patients under their care. Inexperienced nurses have been shown to have difficulties in recognizing sepsis, deteriorations in a patient's status, and deficits in utilizing critical thinking skills that the experienced nurse has had time to develop which could have significant health consequences for the patient if not caught early in a health crisis (Harley, et al., 2019). Bianchini et al., 2021 showed that lower stress decreased BO scores in nurses but that direct causality could not be assigned to lower perceived stress and BO scores.

Jun et al., (2020) appraised literature on CF, BO, and STS for associations between nurse BO and patient/hospital outcomes. The study found that nurse BO was consistently inversely associated with patient safety, quality of care, nurse organization commitment and productivity and patient satisfaction. In contrast a study by Talebi (2021) unclear results as the meditation exercises introduced by the researcher had no significant effect on anxiety but significantly increased happiness in the experimental group.

This study has implications for nurse education. Even though the results of my study indicated that mindfulness interventions do reduce CF, BO and STS in the acute care nurse, the format of the education process needs to be further explored and expanded upon. The implementation of Mindfulness techniques has been well documented in nursing research but there are differing ideas on the length or shortness of a program being proven to be effective in reducing levels of CF, BO and STS in the acute care nurse. The sample of nurses who responded to the pre and post surveys and Mindfulness techniques showed that many of the nurses did not find the education session effective in reducing their CF, BO and STS

Recommendations

Future studies could focus on the implementation of Mindfulness techniques during the orientation phase of a nurses' introduction to the work environment and also during the precepting stage. However, as the length and duration of a Mindfulness program have not been established in nursing literature at this time. MBIs have been conducted over 4 weeks to 6 months with different formats of instruction varying from deep breathing exercises, journaling, yoga, meditation, webcam podcasts, in-person classes. Further research would need to be carried out using varying program lengths of MBI to establish what length of program would assist the nurse in reducing CF, BO, STS and elevating levels of CS. My study used the Netlearning format where the participants were given an education session on MBIs to practice at home and in the work environment. Therefore, a

study comparing the Netlearning format and online learning would be warranted. Other methods of mindfulness education such as meditation and 5-minute exercises could be more useful in the work setting (Copeland, 2020; Kang et al., 2021; Sarazine et al., 2021).

Conclusion

Mindfulness training and techniques can be used to reduce the number of nurses leaving the world of nursing and can be used to identify why nurses suffer from CF, BO and STS. The nurses who participated in the study did so in the middle of the COVID-19 pandemic when nursing stress was increased due to the pandemic and ever evolving changes in nurse practice according to CDC guidelines. The nurses who participated in the study ($n=70$) showed that the introduction of a mindfulness education session via the Netlearning format did not have any effect on CF, BO and STS or raised CS in the nurses in the acute care facility. A MANOVA test was conducted to compare the effects of the mindfulness education session on CF, BO, STS and CS. There was no significant difference in the levels of CF, BO, STS in the RN's at the acute care facility. Future research in the development and implementation of Mindfulness education via the Netlearning format is indicated to determine the effectiveness of Mindfulness education in reducing CF, BO, and STS and raising levels of CS in nurses working in an five different clinical areas in an acute care facility. My study contributes to the literature because it provides results using the variables, CF, BO and STS in the COVID-19 pandemic as it quantitatively

measured these levels during the process of the pandemic. Although the results did not suggest that levels of CF, BO and STS were reduced by a mindfulness education session during a pandemic, the perceptions of the nurses in five different clinical areas could suggest a correlation between patient care outcomes and have an implication on nursing practice.

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Part 3 Summary

Integration of the Three Studies

This research study was composed of three manuscripts, which included a thorough examination of the use of a mindfulness education session in reducing CF, BO, and STS and raising levels of CS in nurses in an acute care facility. I used Stamm's (2009) model of compassion satisfaction and compassion fatigue that was designed to identify relationships between a nurse's level of BO, years of experience and clinical area in an acute care facility. Study variables also included a mindfulness education session, CF, BO, STS and CS in the nurse, pre and post education session. There were no significant relationships or differences found among the three studies but common themes related to CF, BO, STS and their relation to CS were identified throughout the literature review.

Level of Burnout

Levels of BO continued to be reported despite the mindfulness education session being conducted and the nurses being educated on what BO was and how it could be prevented (Alharbi et al., 2020; Anderson et al. 2020; An et al., 2020; Gautier et al., 2004).

Therefore, MBI sessions to inform the nurse about what CF, BO, STS and its effects on their levels of CS are required to keep the nurse at the bedside and maintain nurse retention (Alharabi et al., 2020; Anderson et al., 2020; Labrague, 2021; Mealer et al., 2020).

Years of Experience

Levels of CF, BO and STS and CS were not shown to be decreased despite years of experience following the education session on Mindfulness for the nurses in the acute care facility (Arias, 2006; Gauthier et al., 2014; Copeland, 2020, Kang et al., 2021; Sarazine et al., 2021). Therefore, the format of the MBI education session needs to be reevaluated regarding its content and duration to assess whether levels of CF, BO, STS can be lowered in the nurse and levels of CS be elevated to relieve work stress (Arias, 2006; Copeland, 2020; Kabat Zim, 2003, Kang et al., 2021, Talebi, 2021).

Clinical Areas

The presence of CF, BO and STS continued to be shown in the nurses in different clinical areas despite access to the mindfulness education session. MBI in different clinical areas has been shown to be beneficial in reducing CF, BO and STS and elevating levels of CS (Bianchnni et al., 2021; Copeland, 2020; Duffield, 2014; Jun et al., 2021). CF, BO and STS have been shown to be increased in high patient volume and high patient acuity areas (Labrague, 2021, MacKensie et al., 2006; Saban et al., 2021; Surazine, 2021).

Lessons Learned

Quantitative research relies on the underlying thoughts that the world of healthcare is stable and predictable, and that the numerical data collection and analysis will explain the problem or interest. In contrast qualitative research allows the researcher to observe the adaptations a person might have in a stressful situation such as nursing and is able to

draw conclusions of the constant changes in the healthcare environment. As the researcher, my goal was to determine if there was a relationship between mindfulness - based education to reduce levels of CF, BO, and STS in the nurse and raise CS levels. However, CF, BO, STS and CS may be observed or perceived differently in each nurse based on the situation at that time. The ProQOL tool may have been too confining as a tool to accurately measure CF, BO, STS and CS for the purpose of this study. The questions do not relate to any specific scenario or situation and the pre and post survey format is dependent on how the nurse is feeling at that time. Therefore, it may be difficult to determine the correlation between the use of an mindfulness education session to reduce CF, BO and STS and to raise levels of CS in the nurse. A qualitative research design may have brought forth more expansive details that encompass how a nurse responds to CF, BO and STS in any given situation and how a mindfulness education session helped in elevating their level of CS.

Conclusion

CF, BO and STS continue to be on the rise in the world of healthcare. Recently due to the COVID-19 pandemic and the uncertainty associated with the virus, its duration and cause has caused an increased in patient volume, acuity and nurses to leave the workforce due to stress. Because of this wider range of patient needs, acuity and ever evolving changes in healthcare, this study promotes positive social change related to a much needed focus on the effects CF, BO and STS have on the healthcare profession. Relevant scholarship

presented throughout the three manuscripts supported a positive social change and suggested a stronger culture for awareness of CF, BO, and STS in the nurse which in turn will promote consideration of behavioral needs of the nurse related to quality, safety and service outcomes. Insights from this study should guide and encourage healthcare organizations to consider the implications that CF, BO and STS can have on a nurses level of CS, which in turn could affect patient outcomes. Future studies to understand nurses' understanding of the components of CF, BO and STS and its effects on patient safety and nurse retention are needed.

Appendix A: Compassion Satisfaction and Compassion Fatigue (ProQOL) Version 5

YOUR SCORES ON THE PROQOL: PROFESSIONAL QUALITY OF LIFE SCREENING

Based on your responses, place your personal scores below. If you have any concerns, you should discuss them with a physical or mental health care professional.

Compassion Satisfaction _____

Compassion satisfaction is about the pleasure you derive from being able to do your work well. For example, you may feel like it is a pleasure to help others through your work. You may feel positively about your colleagues or your ability to contribute to the work setting or even the greater good of society. Higher scores on this scale represent a greater satisfaction related to your ability to be an effective caregiver in your job.

The average score is 50 (SD 10; alpha scale reliability .88). About 25% of people score higher than 57 and about 25% of people score below 43. If you are in the higher range, you probably derive a good deal of professional satisfaction from your position. If your scores are below 40, you may either find problems with your job, or there may be some other reason—for example, you might derive your satisfaction from activities other than your job.

Burnout _____

Most people have an intuitive idea of what burnout is. From the research perspective, burnout is one of the elements of Compassion Fatigue (CF). It is associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively. These negative feelings usually have a gradual onset. They can reflect the feeling that your efforts make no difference, or they can be associated with a very high workload or a non-supportive work environment. Higher scores on this scale mean that you are at higher risk for burnout.

The average score on the burnout scale is 50 (SD 10; alpha scale reliability .75). About 25% of people score above 57 and about 25% of people score below 43. If your score is below 43, this probably reflects positive feelings about your ability to be effective in your work. If you score above 57 you may wish to think about what at work makes you feel like you are not effective in your position. Your score may reflect your mood; perhaps you were having a "bad day" or are in need of some time off. If the high score persists or if it is reflective of other worries, it may be a cause for concern.

Secondary Traumatic Stress _____

The second component of Compassion Fatigue (CF) is secondary traumatic stress (STS). It is about your work related, secondary exposure to extremely or traumatically stressful events. Developing problems due to exposure to other's trauma is somewhat rare but does happen to many people who care for those who have experienced extremely or traumatically stressful events. For example, you may repeatedly hear stories about the traumatic things that happen to other people, commonly called Vicarious Traumatization. If your work puts you directly in the path of danger, for example, field work in a war or area of civil violence, this is not secondary exposure; your exposure is primary. However, if you are exposed to others' traumatic events as a result of your work, for example, as a therapist or an emergency worker, this is secondary exposure. The symptoms of STS are usually rapid in onset and associated with a particular event. They may include being afraid, having difficulty sleeping, having images of the upsetting event pop into your mind, or avoiding things that remind you of the event.

The average score on this scale is 50 (SD 10; alpha scale reliability .81). About 25% of people score below 43 and about 25% of people score above 57. If your score is above 57, you may want to take some time to think about what at work may be frightening to you or if there is some other reason for the elevated score. While higher scores do not mean that you do have a problem, they are an indication that you may want to examine how you feel about your work and your work environment. You may wish to discuss this with your supervisor, a colleague, or a health care professional.

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(2009)

YOUR SCORES ON THE PROQOL: PROFESSIONAL QUALITY OF LIFE SCREENING

Based on your responses, place your personal scores below. If you have any concerns, you should discuss them with a physical or mental health care professional.

Compassion Satisfaction _____

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WHAT IS MY SCORE AND WHAT DOES IT MEAN?

In this section, you will score your test so you understand the interpretation for you. To find your score on **each section**, total the questions listed on the left and then find your score in the table on the right of the section.

Compassion Satisfaction Scale

Copy your rating on each of these questions on to this table and add them up. When you have added them up you can find your score on the table to the right.

- 3. _____
 - 6. _____
 - 12. _____
 - 16. _____
 - 18. _____
 - 20. _____
 - 22. _____
 - 24. _____
 - 27. _____
 - 30. _____
- Total:** _____

The sum of my Compassion Satisfaction questions is	So My Score Equals	And my Compassion Satisfaction level is
22 or less	43 or less	Low
Between 23 and 41	Around 50	Average
42 or more	57 or more	High

Burnout Scale

On the burnout scale you will need to take an extra step. Starred items are "reverse scored." If you scored the item 1, write a 5 beside it. The reason we ask you to reverse the scores is because scientifically the measure works better when these questions are asked in a positive way though they can tell us more about their negative form. For example, question 1. "I am happy" tells us more about

- *1. _____ = _____
 - *4. _____ = _____
 - 8. _____
 - 10. _____
 - *15. _____ = _____
 - *17. _____ = _____
 - 19. _____
 - 21. _____
 - 26. _____
 - *29. _____ = _____
- Total:** _____

You Wrote	Change to
	5
2	4
3	3
4	2
5	1

the effects of helping when you are *not* happy so you reverse the score

The sum of my Burnout Questions is	So my score equals	And my Burnout level is
22 or less	43 or less	Low
Between 23 and 41	Around 50	Average
42 or more	57 or more	High

Secondary Traumatic Stress Scale

Just like you did on Compassion Satisfaction, copy your rating on each of these questions on to this table and add them up. When you have added them up you can find your score on the table to the right.

- 2. _____
 - 5. _____
 - 7. _____
 - 9. _____
 - 11. _____
 - 13. _____
 - 14. _____
 - 23. _____
 - 25. _____
 - 28. _____
- Total:** _____

The sum of my Secondary Trauma questions is	So My Score Equals	And my Secondary Traumatic Stress level is
22 or less	43 or less	Low
Between 23 and 41	Around 50	Average
42 or more	57 or more	High

Appendix B: Permission to use ProQOL

Permission to Use the ProQOL

Thank you for your interest in using the Professional Quality of Life Measure (ProQOL).

Please share the following information with us to obtain permission to use the measure:

Please provide your contact information: Email Address

pamela.spendiff@waldenu.edu

Name

Pamela Spendiff

Organization Name, if applicable

Walden University

Country

United States

Please tell us briefly about your project:

I am a PhD candidate in Nursing Education and wish to use the ProQOL measurement tool to measure compassion fatigue and compassion satisfaction in registered nurses. I am developing an education session on what compassion fatigue is and how it may be reduced using a Mindfulness intervention.

What is the population you will be using the ProQOL with?

Registered nurses in an acute care facility

In what language/s do you plan to use the ProQOL?

Listed here are the languages in which the ProQOL is currently available (see https://proqol.org/ProQol_Test.html). If you wish to use a language not listed here, please select "Other" and specify which language/s.

English

The ProQOL measure may be freely copied and used, without individualized permission from the ProQOL office, as long as: You credit The Center for Victims of Torture and provide a link to www.ProQOL.org; It is not sold; and No changes are made, other than creating or using a translation, and/or replacing "[helper]" with a more specific term such as "nurse."

Note that the following situations are acceptable: You can reformat the ProQOL, including putting it in a virtual format You can use the ProQOL as part of work you are paid to do, such as at a training: you just cannot sell the measure itself

Does your use of the ProQOL abide by the three criteria listed above? (If yes, you are free to use the ProQOL immediately upon submitting this form. If not, the ProQOL office will be in contact in order to establish your permission to use the measure.)

Yes

Thank you for your interest in the ProQOL! We hope that you find it useful. You will receive an email from the ProQOL office that records your answers to these questions and provides your permission to use the ProQOL.

We invite any comments from you about the ProQOL and the experience of using it at proqol@cvt.org. Please also contact us if you have any questions about using the ProQOL, even if you noted them on this form. Note that unfortunately, our capacity is quite limited so we may not be able to respond to your note: however, we greatly appreciate your engagement.

Appendix C. Recruitment Invitation



Volunteers needed

You are invited to participate in a research study focused on the use of Mindfulness techniques to combat compassion fatigue and burnout in the nurse.

You are eligible if you are:

Over 18 years of age

A Registered Nurse who works 36 hours a week providing patient care.

The results of this study will be used to develop a Mindfulness Intervention program for nurses to prevent nurses leaving the profession due to compassion fatigue and burn out.

This study will consist of a 2 hour education session on Mindfulness techniques.

If you are interested in participating in this study/education session or have questions please contact me at pamela.spendiff@waldenu.edu

Presenter: Pam Spendiff, RN, MSN, RSCN, CPN, PhD Candidate

Appendix D: Survey—Demographic Items and Subject Eligibility Item

Age in years

- a. 18-30
- b. 31-40
- c. 41-50
- d. 51-60
- e. 61-70
- f. 71 and up

2. Professional nurse experience in years

- a. 0-2
- b. 3-5
- c. 6-10
- d. 11-20
- e. 21-30
- f. 31 and up

Work hours per week:

Full time

Part time

What is your gender?

- a. Female
- b. Male
- c. Transgender

Prefer not to answer

What is your primary ethnicity?

American Indian or Alaska native

Asian

Black or African American

White

Hispanic or Latin

Middle Eastern/North African

Other

Prefer not to answer

5. What is your highest completed degree in nursing?

- a. Associate's degree
- b. Diploma program
- c. Bachelor's degree
- d. Master's degree
- e. Doctoral degree

Type of nurse license/certificate:

Advanced Registered

NP/PA

Registered nurse

Work setting:

Medicine/Surgical/Oncology/Radiology

ED

Pre-anesthesia/PACU/OR

Pediatrics/obstetrics

Education

Subject Eligibility Item:

Are you over 18 years of age?

A registered nurse who provides nursing care to patients in a hospital (acute care)

inpatient unit, observation unit, procedural area, or emergency department?

a. Yes

b. No