EFFECT OF A PEER-TO-PEER EDUCATIONAL INTERVENTION ON COMPASSION FATIGUE AND BURNOUT IN FLIGHT NURSES

by

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Presented in [Partial] Fulfillment

of the Requirements for the Degree

Doctor of Nursing Practice

Aspen University

January, 2021

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[January, 2021]

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Acknowledgements

A great deal of gratitude is owed to Dr. Vivienne McDaniel, my faculty committee chairperson, for her immense assistance throughout this project. From the phone calls and emails, sometimes daily, to the rewriting of sections multiple times, Dr. McDaniel's assistance and brilliance was unsurpassed. Without her guidance and expertise, this project would have been prolonged and inferior.

Countless thanks are also due to my faculty reviewer, Dr. Sherri Carter, and my independent reviewer, Dr. Jennifer McSorley. Their reviews and feedback, as well as their support during the project implementation, were valuable and made the project a success.

To my preceptor and friend, Dr. Jennifer Sedlock, I appreciate your support throughout the entire process. Your assistance in finding immersion sites and your reviews of my manuscript were not only helpful, but are indicative of your level of expertise and dedication to the field.

Mostly importantly, much love and praise are owed to my partner Big Jason, and my son Little Jason. The support I have received from home throughout the many years of schooling I have completed cannot be measured. Many times, I asked Big Jason to read my drafts, even though he had no idea what he was reading, and provide feedback. He always obliged. I know there were many times when Little Jason could not understand why Dad was busy, but the innumerous amounts of hugs received daily have made this process worth it. I love you both and my life has been made better by you both.

Dedication

To my son Jason, since the day I met you, you have taught me more than I could ever teach you. Though life has never been easy for you, your smile, hugs, and joy are constant and keep me going. Your resilience and determination have influenced me in this work and it is dedicated to you.

This work is dedicated to the many flight nurses that have not only pioneered the industry, but continue to provide critical care in inhospitable environments. To those that have given of their lives in the line of duty, you will never be forgotten and this is for you.

Abstract

The issues of compassion fatigue and burnout has plagued up to 40% of nurses in critical care environments. While flight nurses practice in a critical care environment, there was no research or education available specific to flight nurses. As a unique specialty in nursing, flight nurses practice in the pre-hospital setting and have not been represented in the research available. This DNP project sought to create a peer-to-peer educational intervention specific for flight nurses and determine if the intervention resulted in a decrease in compassion fatigue and burnout for flight nurses. The project was implemented utilizing the *Plan-Do-Study-Act Model for Improvement* translational change model. Utilizing the Professional Quality of Life (ProQOL) survey, pre- and post-intervention compassion fatigue, burnout, and compassion satisfaction levels were determined. Participants completed a one-hour presentation and received a handout that was specific to compassion fatigue and burnout in flight nurses. The results of the project were analyzed utilizing a two-tailed T-test and a confidence level of 95% to evaluate the mean scores. Participants (N=31) experienced a mean decrease in compassion fatigue level by 17%, although not a statistically significant decrease. Female participants (N=21) experienced the greatest decrease in compassion fatigue and burnout with a 30% and 24.8% decrease respectively. Representing such an important topic, further research should be performed to determine the difference between males and females and the prevalence of compassion fatigue and burnout in the air medical industry.

Keywords: Compassion fatigue, burnout, compassion satisfaction, *ProQOL*, educational intervention, flight nurse, flight nursing, air medical industry, *Plan-Do-Study-Act Model*

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Effect of an Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

Chapter One: Introduction and Overview

Healthcare workers, such as nurses, provide a wide range of tasks that are collectively referred to as care. Nurses in high-stress and high-acuity environments are plagued with symptoms of burnout (BO) and high rates of employee turnover. While these symptoms are collectively known as BO by many mental health professionals, there are several different types of BO and one includes a stressor known as compassion fatigue (CF). There are many research studies that have been performed to evaluate the presence of CF and BO in many areas of the healthcare field.

CF is the result of repeated intense involvement, emotionally and psychologically, with patients suffering from traumatic or life-altering events and is the result of secondary traumatic stress (Ruiz-Fernandez et al., 2020). As the direct caregiver to a patient that experiences life-altering events, nurses directly witness the stresses of the patient's health and experience a portion of the patient's life with them and are thus influenced by this trauma. The witnessing of these traumatic events impacts the nurse secondarily and transfers a portion of that trauma to the caregiver. As a caregiver, the transfer of trauma from patient to nurse is a natural consequence of being entrusted to care for someone.

The concept of BO is similar to that of CF. BO is commonly associated with poor management, lack of support from management and executives, and feelings of poor working conditions Hunsaker et al., 2015). However, BO is generally not linked to empathy (Hunsaker et al., 2015). BO is defined as a syndrome identified by three common factors (van Mol et al., 2015). The common factors generally utilized to assess for BO are: Emotional exhaustion, depersonalization, and feelings of personal accomplishment (van Mol et al., 2015). Since CF is

an emotional exhaustion, it is closely related to BO and is frequently noted as a contributor to feelings of BO. CF left untreated or unrecognized may also result in BO (van Mol et al., 2015).

In the current healthcare environment, many nurses in direct care positions report a decrease in their satisfaction that is attributed to increasing stresses of healthcare reform (Kelly et al., 2015). Additionally, an overwhelming amount of research presents that acute care nurses are at increased risk for BO, due to the demanding and high-stress environment in which they practice (Nolte et al., 2017; Kelly et al., 2015; van Mol et al., 2015). Due to the complexity of patient conditions and the moral distress experienced, nurses in the acute care setting are at an increased risk of BO and CF compared to other caring professions (Rushton et al., 2015).

CF and BO directly relate to the professional quality of life for healthcare providers. Monroe et al., (2020) discovered that 48% of the nurses surveyed stated that BO combined with poor staffing was the main reason for leaving their position. Further conclusions included that the demanding nature of the critical care environment predisposed the healthcare team to stress, and resulted in an increased rate of secondary traumatic stress (STS) in critical care providers (Monroe et al., 2020). Suicide and drug use among the nursing workers is noted at a higher incident rate than other healthcare professional counter-parts (Bourgault, 2019).

While there is a plethora of research concerning BO in the general nursing population and an abundance of research regarding CF amongst the high-acuity nursing settings, the plethora of information does not extend into the air medical community or to flight nurses. To date, little research exists examining the prevalence or effect of CF, compassion satisfaction (CS), or BO among flight nurses in the United States. Furthermore, no research exists examining the effects of education on the incidence of CF and BO in the air medical community. Given that CF, CS,

and BO are main contributors to healthcare professional BO, this scholarly project seeks to identify the effect of an educational intervention on the levels of CF and BO in flight nurses.

Evidence-Based Practice Model

Nursing practice has been led by scientific inquiry and investigation since the inception of the nursing profession. Research has shown evidence-based practice is vital to improving patient outcomes (Melnyk et al., 2010). Additionally, evidence-based practice reduces the cost of healthcare and increases the quality of patient care while leading to increased nurse satisfaction (Mateo & Foreman, 2014; Melnyk et al., 2010). This scholarly project will utilize *The Plan-Do-Study-Act* framework to guide the project.

Spirit of Inquiry

Nurses within the air medical environment experience high-stress and high-acuity patients on a frequent basis. As a result, flight nurses are at an increased risk for CF and BO. With little research into the prevalence of CF in the air medical community, this scholarly project seeks to evaluate the effectiveness of an educational intervention on CF, BO, and CS levels in flight nurses.

Identify Issue

Current turnover rates for flight nurses within the largest air medical company in the United States is greater than 23% and has remained at this level for the past five years (L. Blaine, personal communication, April 5, 2020). With no exit interviews for those crew members resigning from the company, there are few details as to their resignations. The air medical community is primarily a for-profit industry that is divided by four major companies. With over 1,500 air ambulances, the air ambulance market is over-saturated which has resulted in a highly-

competitive marketplace. The for-profit and highly-competitive market may result in decreased employee satisfaction and perception of decreased meaningful employee recognition.

In a simple review of the available literature, there is no research on the topic of CF and BO in the air medical community. Moreover, there is scant evidence of the effectiveness of education in the treatment or prevention of CF or BO. While there is research on the topic of CF and BO in nurses functioning in high-stress and high-acuity environments similar to flight nurses, there is no evidence specifically in flight nurses. Currently, there is an absence of interventions in place for flight nurses pertaining to CF and BO. Furthermore, there is a lack of research on the topic of CF and BO in the air medical community.

Understanding the Background

The concept of CF is not a new issue. However, the topic of CF and BO has gained new attention in the past decade in relationship to healthcare professionals. The term CF was first described in nursing by nurse Carla Joinson in 1992 (Nolte et al., 2017). CF is frequently utilized interchangeably with the terms secondary traumatic stress, secondary traumatic stress syndrome, vicarious stress, and vicarious trauma (Nolte et al., 2017). While these terms are used interchangeably, it is important to note that secondary traumatic stress is the condition that results from indirect experience with the patient's trauma (Howard & Navega, 2018). CF is a process that occurs as a result of this experience without support (Howard & Navega, 2018). The majority of the research defines CF as a phenomenon that creates "a state of exhaustion that is dependent on a caring relationship" (Nolte et al., 2017, p. 4365). BO is further defined by Howard and Navega (2018) as being exposed to situations that result in feelings of reduced personal accomplishment from repeated interpersonal issues and depersonalization.

Research outlines a wealth of different rationales for CF and BO (Hunsaker et al., 2015). While the reasons for healthcare provider CF and BO varied based upon work environment and healthy life balance, many studies point to workplace engagement (Hunsaker et al., 2015; Ruiz-Fernandez et al., 2020; Monroe et al., 2020) and meaningful recognition by managers (Kelly & Lefton, 2017) as frequent contributors. A systematic review of the available literature on CF in intensive care nurses by van Mol et al., (2015) reported that CF is present in approximately 7.3% to 40% of the nurses surveyed. Additionally, a large percentage of the nurses determined to be compassion fatigued were also noted to have severe BO (van Mol et al., 2015).

Nurses with low CS and high CF and BO scores on the Professional Quality of Life (ProQOL) assessment were more likely to leave their current position in the next year resulting in significant turnover (Nolte et al., 2017). Presuming that flight nurses care for the same critically ill and injured patients as intensive care unit (ICU) and emergency department (ED) nurses, flight nurses are equally at risk for CF and BO as the ICU and ED nurses. Additionally, the air medical community is a unique setting in which nurses work outside of the hospital environment, known as field medicine. An educational program for flight nurses may result in a decrease of CF and BO and an increase in CS.

With the understanding that flight nurses practice in the critical care and emergency settings, it would be appropriate to assume that flight nurses are equally at risk of CF and BO as critical care or emergency nurses. As it currently stands, there are no educational requirements for CF and BO education for the flight nurses at the largest air medical company in the United States (L. Blaine, personal communication, April 5, 2020).

Specifics of the Clinical Problem

CF and BO may lead to a multitude of problems for the patient, employee, and employer. CF and BO lead to emotional distress for the caregiver which may have negative mental effects and result in poor self-behaviors such as substance use (Jarrad et al., 2018). Sub-optimal care of the patient is another result of CF and BO that must be addressed as well, as it can be detrimental to the patient's recovery and mortality rates (Mason et al., 2014). Untreated CF may lead to occupational BO for healthcare providers (Howard & Navega, 2018). Treatment and prevention of CF and BO are vital to ensuring the health of the air medical community members. Determining the effect of an educational intervention on the level of CF, CS, and BO is important to understanding actions necessary for the health of air medical crew members.

Problem Statement

CF and BO lead to negative outcomes for patients, healthcare providers, and employers. Flight nurses must employ a wide range of technical and critical thinking skills, as well as care for the emotional aspects of critically ill patients in a variety of settings (Air & Surface Transport Nurse Association [ASTNA], 2014). Additionally, flight nurses must provide life-saving critical care to patients of all ages and conditions (ASTNA, 2014)., Commonly, flight nurses provide care to patients with the most critical and life-threatening conditions (ASTNA, 2014). As a result of caring for and treating patients with the critical illnesses and injuries, flight nurses are at risk for and frequently suffer from CF and BO. Without intervention to prevent and treat CF and BO, flight nurses will suffer alone and commonly leave the profession. The consequences of flight nurses with high levels of CF and BO are high turnover rates, decreased quality of care, increased risk for patient injuries, and higher cost to air medical organizations. The research question seeks to determine if an educational intervention will result in a statistically significant

change in the level of CF, CS, or BO on the ProQOL assessment tool for flight nurses. The purpose of this scholarly project is to decrease the level of CF and BO and increase the level of CS in flight nurses by performing a peer-to-peer educational session.

Clinical Question

As a caregiver that provides healthcare to critically ill and injured patients, flight nurses are psychological vulnerable to emotional and moral distress associated with this care. The environment of the air ambulance is a high-intensity setting that may profoundly stress the flight nurse and result in depression, anxiety, substance abuse, or job turnover. To further understand the issue, the following question is asked:

What is the effect of a one-hour peer-to-peer educational program on perceptions of CF, BO, and CS in flight nurses?

Significance of the Problem

A growing body of evidence showed an increase in the number of nurses committing suicide, developing anxiety and depression, and contributing to lateral violence in the workplace (Bourgault, 2019). In 2014, the Centers for Disease Control and Prevention (CDC) found that nurse suicides were higher than the general population (Bourgault, 2019). Additionally, nurses that committed suicide had significantly more mental health issues than their male or female general counterparts (Bourgault, 2019).

Currently, there are no research studies evaluating the prevalence of CF and BO in flight nurses. Furthermore, no research exists examining the effect of education on CF and BO incidence in the air medical community. However, evidence does exist showing one of the most effective interventions that can assist a clinician in dealing with BO includes education on recognition and treatment CF and BO (Houck, 2014). By seeking to understand how education

affects the levels of CF, CS, and BO among flight nurses, this scholarly project will contribute original research to the field.

While this DNP project will include only flight nurses, it may have wide-spread interest by other healthcare professionals, such as the greater EMS community and other air medical personnel. There is insufficient research on CF amongst EMS providers, as well as insufficient research as to how education can affect CF and BO. This scholarly DNP project will contribute to the research available on CF and BO in the nursing community. Research revealing the prevalence of CF and BO in the air medical community may lead to additional new interventions and better treatment for air medical crew members. Recognition of CF and BO may also lead to less turnover in the air medical community.

Ultimately, the flight nurses will benefit from this scholarly DNP project. Armed with the prevalence data, flight crew members can seek education and encourage employers to offer training on CF and BO. Flight nurses will also benefit from this project with an understanding of CF and BO. An understanding of CF and BO will prepare the flight nurse to assess for, recognize, and treat CF and BO before it causes issues. Additionally, employers will benefit from the research data obtained from this project, and if utilized, it may decrease the turnover rate among their employees. While patients may not directly benefit from this research study, patients may be indirectly affected by an increase in quality of care from decreased rates of CF and BO among flight nurses.

Purpose Statement

The purpose of this evidence-based practice project was to determine if a quality improvement educational intervention developed specifically for flight nurses will decrease the level of CF and BO and increase the level of CS in flight nurses.

The literature supported a need to decrease the CF and BO in nurses who work in emergency services, but a gap existed concerning the type of interventions that would decrease CF and BO and increase quality of life and satisfaction (Corcoran, 2020; Rushton et al., 2015). Numerous studies (Sacco et al., 2015; Lobo et al., 2018; Mattioli et al., 2018) have demonstrated the value of decreasing CF and BO, but none were specific to flight nurses. If flight nurses are provided resources such as educational tools that teach them how to cope with CF and BO, perhaps they will not prematurely leave the profession. The successful implementation of the project may ultimately reduce turnover and decrease the financial burden caused by turnover.

Determining the level of CF, CS, and BO in flight nurses is vital to contributing to the overall condition of the profession of flight medicine. By administering and evaluating the ProQOL self-assessment to flight nurses across the United States, greater insight can be developed to evaluate if education is effective in decreasing the incidence of CF and BO. This project will contribute to best practices by allowing interventions to be developed for flight programs that may alleviate or diminish the incidence of CF and BO for flight nurses.

Summary

BO and CF are common issues in the profession of nursing. However, there is negligible research into CF in the EMS community which includes the air medical community. There is a gap in research evaluating CF and BO in flight nurses and little evidence exists on the effect of education on the level of CF, BO, and CS. CF and BO contribute to the workplace environment and culture and decrease quality of care. CF and BO may also contribute to maladaptive behaviors in nurses. With these known factors, it is reasonable to assume that flight nurses are also at risk for CF and BO, but with no education on the conditions. This project will seek to determine the level of CF, BO, and CS in the specific setting of the air medical community

across all companies providing these services. Through the plethora of evidence that will be presented in chapter two, the importance of this project will be understood and outlined.

Chapter Two: Review of Evidence

Review of the available literature on the topic of CF is exhaustive and inclusive. There were many terms utilized to define and search for articles and resources on the topic of CF, BO, and CS. Although there are masses of research on the topic of CF and BO, much of the available research does not involve nurses or medical staff members. Throughout the search, several themes were identified and included CF and critical care nurses, CF and workplace environment, and influencing factors of CF.

PICO Question

The initiation of a scholarly project requires the development of a clinical question. Clinicians seeking to utilize evidence-based medicine to make changes to the nursing profession or organization must first understand what the question is they wish to answer. Having an organized method for developing and asking a research question is important to furthering and implementing the available evidence (Riva et al., 2012). Additionally, a standardized PICO question can assist future projects by creating a uniform method for asking research questions (Riva et al., 2012).

- (P) Population – flight nurses
- (I) Intervention – peer-to-peer educational intervention
- (C) Comparison intervention – post-educational CF, BO, and CS assessments
- (O) Outcome –level of CF, BO and CS

In flight nurses, how effective is a peer-to-peer educational intervention on CF and BO on the level of CF, BO, and CS?

Search Strategies

An initial search of terms related to CF was completed by utilizing the PubMed search of Medical Subject Headings (MeSH) terms. PubMed returned various terms in multiple formats of the following: CF, vicarious trauma, secondary trauma, secondary traumatization, secondary traumatic stress, and vicarious traumatization. A search of MeSH terms related to BO provided the terms professional BO, occupational BO, and career BO as results.

A comprehensive literature review was completed utilizing the following databases: EBSCOhost, CINAHL, Google Scholar, ProQuest Central, and PubMed Central. The search terms utilized for references included: CF, secondary traumatic stress, vicarious trauma, nurse, critical care nurses, intensive care unit, emergency department, emergency nurses, emergency medical services, effect of CF, education intervention, moral distress, CF interventions, BO, nurse turnover, nurse suicide, emotional response, psychological first aid, managing CF, nursing BO interventions, coping strategies, CS, professional quality of life, ProQOL, resilience, nurse retention, and substance use. Initial searches resulted in over 500 resources which required further refinement for inclusion. Each resource was evaluated for relevance and age. Utilizing search terms, date and full-text limitations, the search resulted in approximately 100 resources. After further review, 27 articles were selected for the literature review. After article selection was completed, one additional new research study was discovered in the a recent *Critical Care Nurse* journal received by mail and was added to the literature review. Additionally, a study by Flarity et al. (2013), was discovered in the search. However, utilizing the databases with availability, the project manager was unable to obtain the article. The project manager contacted the author by email and was able to obtain the journal directly from the author and the article has been included in the literature review as well.

Multiple terms and operators were utilized during the literature review including the use of "compassion fatigue" AND nurs*, burnout AND nurs*, "flight nurs*" AND "compassion fatigue," "compassion fatigue" AND "vicarious trauma" AND "secondary traumatic stress" AND nurs*, "compassion fatigue" OR burnout AND turnover, "critical care nurs*" AND "compassion fatigue" AND burnout, "emergency nurs*" AND "compassion fatigue" AND burnout, "compassion fatigue" AND nurs* AND suicide, "compassion fatigue" AND "substance use", and ProQOL AND nurs*. After the results were narrowed utilizing the search terms and limitations, the articles were evaluated utilizing the Oxford University Centre for Evidence-based Medicine (CEBM) guides. After the resources were critically-appraised and determined to be acceptable, a table of evidence was created.

Evaluation, Appraisal, and Synthesis of the Body of Evidence

An exhaustive search of data utilizing the search terms outlined resulted in a plethora of journals that required evaluation to determine the applicability and usefulness of the study to this project. Thirty articles were selected for utilization based upon appraisal. The critical appraisal tools from CEBM were utilized for critical appraisal of the evidence. CEBM has six different critical appraisal tools that are publicly available for use by clinicians. The six critical appraisal tools include different tools for systematic reviews, diagnostics, prognosis, randomized controlled trials, qualitative studies, and individual patient data studies (CEBM, 2020). Each sheet contains specific information utilized to evaluate each type of study. Each article or study is categorized into a specific level of evidence. There are five levels of evidence with level one representing the highest quality and reliability and five representing the lowest quality (Oxford, Centre for Evidence-Based Medicine [OCEBM], 2011). Only articles with an OCEBM level of

three or above were considered. The results of the critical appraisal are outlined in the table of evidence (Appendix A).

Summary of the Body of Evidence Findings

The profession of nursing has been known as a caring profession since the time of Florence Nightingale (Mattioli et al., 2018). Nightingale, hailed as the mother of the nursing profession, modeled several values that included not only self-sacrifice, but caring (Mattioli et al., 2018). Nightingale also taught her proteges that the suffering of patients could be relieved by compassion (Mattioli et al., 2018). As a result of nurses placing themselves in the position of caring for others, nurses are at risk for a condition known as CF (Mattioli et al., 2018). Commonly associated with the term CF is the concept of professional BO. However, these conditions also existed independently of each other or contributed to each other (Mattioli et al., 2018).

Risk of CF

As the highest-regarded profession in the United States, nurses are entrusted to provide care for patients at the most vulnerable times in their lives (Foli & Thompson, 2019). As the direct caregiver to patients that are experiencing or have experienced traumatic life events, nurses witness the trauma and may experience the patient's trauma secondarily (Foli & Thompson, 2019). When nurses begin to care about the needs of others before their own, whether subconsciously or overtly, CF can grow (Mattioli et al., 2018). This need to care for others will lead to a decrease in self-care as the nurse is exposed to continuous traumatic events in patient care and led to a reduction in the nurse's personal boundaries (Mattioli et al., 2018). Additionally, Mattioli et al., (2018) stated that nurses are at risk for CF simply based upon the task of providing care. In the study discussed by Mattioli et al. (2018), 549 oncology nurses in

the United States and Canada were surveyed with the ProQOL tool. The results of the study suggested that younger nurses (nurses less than 40 years of age) and nurses with higher levels of education (master degree or higher) are at higher risk of developing CF (Mattioli et al., 2018).

Burnout

High stress levels in the nursing profession can lead to negative psychological or maladaptive behaviors, decreased job satisfaction, disengagement, and turnover (Rushton et al., 2015). This collection of symptoms is typically referred to a BO. The term BO includes a depersonalization and reduced personal accomplishment for the nurse (Rushton et al., 2015). All of these negative experiences and emotions place a demand on the nurse that can lead to moral distress (Rushton et al., 2015). When combined with continued perceived staffing issues, excessive workloads and emotional depletion from dealing with sick and dying patients, some nurses abandon the profession of nursing completely (Rushton et al., 2015).

Utilizing six separate survey instruments, Rushton et al., completed a cross-sectional study of nurses working in high-acuity ICU's, medical/surgical, and oncology units (2015). Utilizing the six survey instruments, Rushton et al., (2015) found that the specialty area was insignificant, as the results were similar across the different departments. However, moral distress levels were significantly higher in critical care nurses than the other specialty departments, with critical care nurses reporting a *Moral Distress Scale* mean of 69.1 versus the other departments means of 49.4 and 41.8 (Rushton et al., 2015). On a survey of self-reported well-being, BO had an inverse relationship to well-being (Rushton et al., 2015). Most significant was that moral distress was a predictor of all three aspects of BO on the survey (Rushton et al., 2015).

Facilities that showed high rates of BO amongst the nurses also reported lower patient satisfaction surveys (Hinderer et al., 2014). Lower patient satisfaction scores result in a decreased payment from the Centers for Medicare and Medicaid Services (CMS) and thus has financial implications for facilities (Hinderer et al., 2014). In a study of trauma nurses, Hinderer et al., (2014) found that 35.9% had BO scores greater than 22 on the ProQOL assessment, which indicates that the nurse was suffering from BO. CS was noted to correlate with the rate of BO among trauma nurses with an inverse correlation (Hinderer et al., 2014).

Prevalence of CF

The presence of CF in nurses has been established by multiple studies. The prevalence of CF across all nurses varies by many factors, including the specialty area and environment worked in (van Mol et al., 2015; Nolte et al., 2017). A systematic review of studies on the prevalence of CF and BO in ICU nurses showed that CF exists in 7.3% to 40% of participants utilizing the ProQOL assessment (van Mol et al., 2015). The systematic review also noted that on the Secondary Traumatic Stress assessment tool, the prevalence of CF ranged from 0% to 38.5% (van Mol et al., 2015).

In a study of trauma nurses, 78.9% of the nurses sampled showed above average CF scores on both the ProQOL assessment (Hinderer et al., 2014). Although research by Sacco et al., (2015) found average CF scores across all ICU settings in a large academic medical center, it also noted that the youngest nurses, those in the 20-29 years of age category, had the highest risk for CF, although the score was not significantly higher than their older counterparts ($p=0.04$). Another review noted 61.5% of the studies showed nurses with levels consistent with CF were able to be effectively decreased with evidence-based interventions (Cocker & Joss, 2016). A study of ICU nurses in Turkey reported that 60.1% were found to have assessment levels

consistent with CF (Dikmen, et al., 2016). However, Dikmen et al., (2016) found that the rate of CF was significantly higher in ICU nurses than emergency nurses (2.33 times increased). Since flight nurses fall into both the ICU and emergency department specialties of nursing, CF exists among flight nurses.

Factors that Contribute to CF and BO

There are a multitude of factors that place specific specialties of nursing at higher risk of developing CF than others. Among the top stressors placed on nursing providers is the requirement that the nurses personal and professional values are constantly tested and require realignment (Ruiz-Fernandez et al., 2020; Rushton et al., 2015). Simply contacting patients suffering from life-threatening illnesses places the nurse at risk of CF (Ruiz-Fernandez et al., 2020). Being exposed to these situations placed the nurses at a point of vulnerability that may have resulted in the development of other mental conditions, such as anxiety and depression (Ruiz-Fernandez et al., 2020).

Of particular interest on the topic of CF was the contribution of the working environment and healthy work-life balance (Hunsaker et al., 2015; Kelly et al., 2015; Ruiz-Fernandez et al., 2020). In a study evaluating predictors of CF, Kelly et al. (2015), noted that nurses working in facilities with more positive work environments, such as Magnet designated organizations, were less likely to have high levels of CF and higher levels of CS. When nurses had higher rates of CS, there was a decrease in the overall number of sick call-ins, mistakes, and turnover among the nursing staff (Kelly et al., 2015).

The only discovered research study that involved a flight nurse as a participant was a study involving all types of "helping" professionals and evaluated stress responses. The study involved the use of a semi-open interview and the ProQOL assessment, participants described

their workplace experiences and stressors (Howard & Navega, 2018). The connection between the work and home life was a theme that continued throughout the study and all participants (Howard & Navega, 2018). The flight nurse interviewed reported that they had a difficult time separating the work and home life and frequently a call would stick with them after they went home from work (Howard & Navega, 2018).

The effect of a healthy working environment has been found to be relational to the quality of life for ICU nurses (Monroe et al., 2020). In a study by Monroe et al. (2020), healthy work environment was evaluated and defined by skilled communication, collaboration, decision-making, staffing, meaningful recognition, and authentic leadership (Monroe et al., 2020). The most significant healthy work environment factor was authentic leadership, collaboration, and decision-making with 33% showing significance in lowering CF levels and increasing CS levels (Monroe et al., 2020). Additionally, nurses reporting high levels of CF rated appropriate staffing as the most important environmental factor needing improvement (Monroe et al., 2020). Consistent with other research, Monroe et al., (2020) also found that authentic leadership had the strongest correlation to decreasing levels of CF among the ICU nurses.

Hunsaker et al., (2015) found that a growing number of visits to the emergency department by patients as a result of healthcare reform may also be affecting the rate of CF and BO. Research noted that while the number of visits by patients have increased, the staffing of nurses in the same department have not (Hunsaker et al., 2015). Thus, work environment is contributing to the level of CF and BO (Hunsaker et al., 2015). Additionally, the rate of CS among the emergency department nurses was inverse to the rate of CF and BO (Hunsaker et al., 2015). Feelings of personal and physical exhaustion were additional factors that were reported to contribute to CF and BO among nurses (Ruiz-Fernandez et al., 2020).

Another finding affecting or relational to the rate of CF and BO in nurses was the nurse's age and years of experience. Hunsaker et al. (2015), Kelly et al. (2015), and Sacco et al. (2015), found that "millennial" nurses (age category of 21-33 years) were more likely to experience high levels of CF and BO with lower levels of CS than the "baby-boomer" and "generation X" nurses. Inexperienced nurses have less ability to cope and manage the effects of CF and BO and are affected by higher levels of both (Kelly et al., 2015). However, as the years of experience in the profession increased, nurses were more likely to have higher levels of CF, but lower levels of CS (Kelly et al., 2015).

The effect of management and meaningful recognition programs also had an effect on the CF and BO. One of the common themes verbalized by nurses was that support of management and support of the employer were major contributors to their level of CF, BO, and CS (Barmawi et al., 2019; Hunsaker et al., 2015; Kelly et al., 2015; Zhang et al., 2017). Nurses that reported that their manager was supportive of them reported higher levels of CS with lower levels of BO (Hunsaker et al., 2015). Likewise, Kelly et al. (2015), reported that nurse satisfaction within their organization, evidenced by quality care and nurse retention programs, had lower levels of CF and higher levels of CS. When nurses were highly satisfied, they were less compassion fatigued (Kelly et al., 2015). Furthermore, nurses with higher nurse-to-patient ratios and increased number of hours worked were at a significantly increased risk of CF (Zhang et al., 2017).

Meaningful recognition programs appear to decrease the levels of CF in critical care nurses (Kelly & Lefton, 2017). While the study by Kelly and Lefton (2017) did not show significant difference between hospitals with and without formal meaningful recognition programs, meaningful recognition was a significant predictor in decreased levels of BO and a higher level of CS. Although recognition and support from the hospital organization significantly

decreased BO and CF levels, having attended a DAISY Award ceremony actually correlated to higher levels of CF (Kelly & Lefton, 2017). However, due to limitations related to the nature of a cross-sectional study, this phenomenon could not be explored further (Kelly & Lefton, 2017).

A study conducted by Wilson et al. (2019), showed that a single traumatic event witnessed by nurses can have a negative effect on the emotional well-being of the nurse. In the study by Wilson et al., nurses completed the Emotional Stress Reaction Questionnaire (ESRQ) prior to their shift and then post-shift (2019). Working a single shift where a trauma occurred and was cared for by the participant resulted in a significant decrease on the negative emotional stress score (Wilson et al., 2019). The authors further found that a single traumatic event resulted in a more negative inflection and repeated events within the shift had a greater effect (Wilson et al., 2019).

Results of CF and BO

The results of untreated or unrecognized CF and BO include maladaptive behaviors such as substance use and suicide, as well as nurse turnover within the organization (Jarrad et al., 2018; Tramutola, 2015; Yang & Kim, 2016). The most serious issue that may result due to CF and BO is suicide. In nursing students alone, one study showed that 10% had reported thoughts of suicide and 1.4% stated that they would try suicide if a chance presented itself (Tramutola, 2015). The specialty within nursing with the highest risk for suicide was emergency and psychiatric nurses (Tramutola, 2015). Many of the nurses that attempted suicide reported that interpersonal conflict, the same conflict frequently responsible for CF and BO, was the greatest reason for attempting suicide (Tramutola, 2015).

The use of substances to self-medicate or treat CF and BO is not uncommon as evidenced by the research of Jarrad et al. (2018). In the study, Jarrad et al. (2018), assessed the nurses for

CF utilizing the 66 item CF score. The participants also completed a survey that asked questions about common substances used and requested a yes or no answer to each question (Jarrad et al., 2018). The mean CF score was 41 for all participants which indicated a high level of CF (Jarrad et al., 2018). Of the substances, the highest used substance by the participants was coffee (69%) followed by analgesic drugs (41%) (Jarrad et al., 2018). The study showed that nurses that consumed the substances on a more frequent basis also reported significantly higher levels of CF (Jarrad et al., 2018). Additionally, Monroe et al. (2014), found that nurses with higher levels of CF were more likely to have lower work engagement scores (score of 3.8 on the *Utrecht Work Engagement Scale*) which is lower than comparable studies.

A high rate of turnover is a common problem in the modern healthcare environment (Yang & Kim, 2016). While research clearly shows that high rates of job satisfaction and CS are associated with lower turnover rates, job stressors continue to contribute to job dissatisfaction for nurses (Yang & Kim, 2016). Utilizing Park and Toon's job satisfaction tool and the ProQOL assessment, Yang & Kim (2016), found that the less satisfied the nurse was with their job, the higher the level of CF and BO. Utilizing an occupational traumatic events tool, research also showed that the more traumatic the event experienced and the frequency of the traumatic event affected the nurse's intention to leave their job, with the nurse reporting they were more likely to leave their job as a result (Yang & Kim, 2016).

There is an economic effect to CF and BO as well (Lobo et al., 2018). As outlined previously, turnover rates increase with CF and BO (Yang & Kim, 2016). However, when nurses quit, an open position results in the need for nurses to work overtime or work short-staffed (Lobo et al., 2018; Mason et al., 2014). The average cost to train a specialty nurse is $64,000 with the open position resulting in over $145,000 in overtime and additional costs to cover the open

position (Mason et al., 2014). While nurses would frequently pick up extra shifts to cover these open positions, Lobo et al., (2018) reported that many nurses would not pick up overtime shifts. The most common rationales given for not working extra shifts was the being too tired (50%) or simply already having plans (71%) (Lobo et al., 2018). Seventy-five percent of the nurses that did work overtime stated that they did it, despite their exhaustion, to help their fellow nurses out (Lobo et al., 2018). This turnover and need for overtime resulted in 21.5 million hours of overtime being paid out by organizations (Lobo et al., 2018). The stresses placed on the nurse from working short-staffed or in an exhausted state can be direct contributors to both CF and BO.

Interventions for CF and BO

There are several interventions that can be implemented that may result in decreased levels of CF and BO (Barmawi et al., 2019; Sansbury et al., 2015; Wentzel & Brysiewicz, 2017). Use of coping strategies has shown significance in not only the prevalence, but the prevention of CF (Barmawi et al., 2019). The ability of the nurse to use problem-solving effectively, predicted a significant increase in the levels of CS (Barmawi et al., 2019). Additionally, Barmawi et al. (2019), demonstrated that nurses utilizing avoidance coping mechanisms showed significantly increased levels of CF.

Self-care was found to be important in decreasing the risk and prevalence of CF and BO among nurses (Sansbury et al., 2015). A thorough understanding of one's self allowed the nurse to control the areas that made the nurse vulnerable to CF (Sansbury et al., 2015). Making a personal plan of action and acting on it proved to be effective in preventing CF, thus requiring the nurse to be educated on the topic of CF and BO (Sansbury et al., 2015).

Healthcare organizations or facilities can also play a role in decreasing CF in nurses (Wentzel & Brysiewicz, 2017). Organizations with areas set aside for nurses to relax and debrief reported feelings of rejuvenation and appreciation (Wentzel & Brysiewicz, 2017). Cognitive behavioral therapy via educational sessions positively affected the ability of nurses to fall asleep and thus reduced fatigue, a contributor to CF and BO (Wentzel & Brysiewicz, 2017). However, cognitive behavioral therapy sessions were two hours in length and were required weekly over a five-week period (Wentzel & Brysiewicz, 2017). Further study showed that team building exercises led to increased interpersonal relationships resulting in decreased levels of CF and BO (Wentzel & Brysiewicz, 2017). Availability and use of employee assistance programs (EAP) had lower incidence of BO (Henry, 2014).

A newer term used to describe interventions for CF and BO is the concept of psychological first aid (Corcoran, 2020). While Corcoran (2020), states that there is very little research in the use of psychological first aid for nurses, research does exist in those professions that respond to disasters, including disaster response nurses. Debriefing, a process that usually occurs during the recovery phase of a disaster response, was encouraged and led to lower incidences of post-traumatic stress disorder (Corcoran, 2020). Repeated exposures to traumatic events led to interpersonal conflict, as was also stated by Rushton et al. (2015), and may be decreased with a psychological first aid program in place (Corcoran, 2020).

The use of education was a topic that had been utilized in several different studies as an intervention for CF and BO. A study by Donald et al. (2019), utilized a program on compassion-based care for the nursing staff. The compassion-based care program included classroom time, animal-assisted therapy, rounding by supervision, complementary therapies, and a compassion corner (Donald et al., 2019). Following the implementation of the program, the participants

reported that the education was transformative to them (Donald et al., 2019). One of the unintended results of the program was that the participants had a decreased rate of absence from work which resulted in a better potential for cost-effectiveness (Donald et al., 2019). The participants also reported that their care delivery was more patient-centered and compassionate, and they were more self-reflective with better engagement in their personal and work lives (Donald et al., 2019).

In a study by Flarity et al. (2013), emergency department nurses in a Colorado hospital volunteered to participate in a study on the effect of an educational program on CF. Utilizing the ProQOL assessment as a pre- and post-test, the level of CF, BO, and CS were measured (Flarity et al., 2013). The nurses voluntarily participated and agreed to a four-hour seminar that included the following topics: Self-regulation, intentionality, perceptual maturation, self-validation, connection and support, and self-care and revitalization (Flarity et al., 2013). The results of the study by Flarity et al. (2013), showed a 34% improvement in BO levels in the post-intervention. Additionally, there was a 19% improvement in the level of CF and a 10% increase in the level of CS after intervention (Flarity et al., 2013). Although this study is more than five years old, it was the only study available that specifically addressed the effect of education on the levels of CF, BO, and CS.

As stated by Sansbury et al. (2015), self-care is important to combating CF. Self-care was also important in combating BO for nurses (Wei et al., 2020). A study performed in pediatric ICU nurses and physicians evaluated strategies utilized to combat BO (Wei et al., 2020). In the qualitative study of 20 participants, Wei et al. (2020), found that 90% of the participants felt that finding meaning in their work was the best strategy to prevent BO. Congruency between self-values and organizational values were important to this process (Wei et al., 2020) and supports

research by Monroe et al. (2020), that showed moral distress was a major cause of CF and BO. Additionally, 75% of participants felt that a clear support system, whether it be some type of spirituality or the ability to reach out to someone for help, was important to preventing BO (Wei et al., 2020).

Limitations in the Search Process

The most common limitation in the literature search process was the lack of research pertaining specifically to flight nurses. While there is a significant amount of research involving nurses, research is limited in the flight nursing and EMS professions. Additionally, much of the research on the prevalence of CF in healthcare has now surpassed five years of age. The prevalence of CF and BO in the nursing profession has been well-established and most research now focuses on interventions and causes, thus limiting studies about frequency of CF and BO today.

Summary

A comprehensive review of available literature on the topic of CF, BO, and nurses was completed. All journal articles were discovered utilizing key terms developed from a PICO question and reviewed for relevance and validity before inclusion in the project. Twenty-six different articles were included in the review with several of the articles representing systematic reviews. As a profession that is known for the care its practitioners provide, CF is not a surprising phenomenon. CF contributes to the phenomenon of BO. Among studies of CF and BO in nurses a majority of research showed that working in a high-acuity and high-mortality specialties places the nurse at a high risk for CF and BO. There are many effects of CF and BO on nurses that can result in seemingly harmless outcomes, such as staff turnover to severe outcomes such as nurse suicide, substance use, and mental health problems. Furthermore, CF and

BO, along with the effect of these conditions on nurses, results in economic losses for healthcare organizations. Interventions and techniques proven in research to prevent and treat CF and BO include self-care, support groups, EAP, cognitive therapy, and education. Chapter Three includes the detailed implementation planning for a scholarly project utilizing evidence-based change theory to lead the educational intervention and change project.

Chapter Three: Implementation

The presence of CF and BO among nurses is a phenomenon that has been studied in several recent studies (Hinderer et al., 2014; Nolte et al., 2017; van Mol et al., 2015). Flight nurses, a sub-specialty of the nursing profession that includes both emergency and ICU nurses, logically also suffer from CF and BO. With no evidence showing that there were interventions in place for flight nurses, this project sought to evaluate the effect of an educational intervention on the levels of CF, CS, and BO in flight nurses. The goal of this project was to decrease the level of BO and CF in the flight nurse population. The use of education as an intervention and prevention for CF and BO may lead to decreased levels of BO and CF and thus have a secondary effect by decreasing turnover rates.

The design of this scholarly project was a quasi-experimental design utilizing a random sampling of flight nurses recruited through Facebook and direct email invitation. The research project was implemented utilizing the ProQOL self-assessment to measure pre- and post-education CF, CS, and BO levels. Given that the ProQOl self-assessment is a tool with high-validity that has been validated in more than 200 research studies (Stamm, 2010), the ProQOL self-assessment was a reliable predictor of the level of CF and BO in flight nurses. Reassessment, utilizing the ProQOL tool, after education has been completed evaluated the effectiveness of the educational intervention on the level of CF, CS, and BO in flight nurses.

Theory Leading the Intervention

A scholarly project seeking to evaluate a phenomenon in nursing require a systematic method for evaluation (Monroe et al., 2014). Utilizing a nursing theory provides the nursing scholar with a methodical way to evaluate and assess a phenomenon (Monroe et al., 2014). *The Theory of Human Caring* will be utilized as the underlying nursing theory for this scholarly

project. Permission to utilize Watson's *Theory of Human Caring* was obtained from Dr. Jean Watson (Appendix B). The *Theory of Human Caring* was developed by Jean Watson and is based on the concepts of intentionality and consciousness (Watson, 2002). Since the origin of Watson's theory, it has continued to be updated, further refined, and continually developed. Additionally, Watson's theory goes by several different names or concepts including, *Unitary Caring Science*, and *Transpersonal Caring Science Theory* (Appendix C) (Wagner et al., 2020).

The Theory of Human Caring is based upon noetic sciences "which refers to mind or direct ways of knowing" (Watson, 2002, p 13). Noetic sciences seek to explore different realities, such as the consciousness and the spirit (Watson, 2002). While most noetic sciences evaluate phenomena outside of the physical realm, it allows for evaluation of the spiritual or conscious realities on the physical realm (Watson, 2002). Working on a framework of moral inquiry, it allows the practitioner to reflect inwardly about a specific experience (Watson, 2002).

Watson's transpersonal perspective is based on the related noetic views (2002). As nurses, Watson felt that caring for the patient required a relationship that incorporates understanding the principles of the spiritual side of the patient (Watson, 2002). Nurses connect with patients at a level that is not necessarily physical and thus share in the patient's humanity (Watson, 2002). As caring is a part of the nurse's emotional persona, nursing care transcends both the unconscious and physical realms and contributes to the concept of caring-healing (Watson, 2002).

One of the core principles of Watson's *Theory of Human Caring* is the balancing between the kindness that the nurse contains within for themselves and the care for other people (Wagner et al., 2020). For a nurse to care for someone else, the nurse must first care for and take care of their own emotional health (Wagner et al., 2020). Watson's theory also required that the nurse be

their authentic self (Wagner et al., 2020). Authentic self refers to the nurse being honest with their inner self, faith, or belief system (Wagner et al., 2020). The core concepts of Watson's *Theory of Human Caring* also include a commitment, at the moral level, to not only protect, but to also enhance the dignity of the human (Wagner et al., 2020). Additionally, Watson outlined that caring for others, such as patients, is a connection at the basic level of being a human and is done at the consciousness level (Wagner et al., 2020). Additionally, the *Theory of Human Caring* acknowledges that the practice of healing-caring requires care of the whole person, which includes the mind, body, and spirit (Wagner et al., 2020). Furthermore, the concept of equanimity is a core principle (Wagner et al., 2020). Watson describes equanimity as the concept of maintaining a balance between the internal and external self (Watson, 2008).

Watson also outlines the concept of intentionality as a core concept of Transpersonal Caring Science. Watson defined intentionality as an ideology of awareness of a mental object that is directed with purpose (Watson, 2002). Utilizing intentionality, the nurse directs their energies toward an action with may dissipate resistance (Watson, 2002). Rather than being goal-directed and outcome driven to change, the intentionality refers to a cooperation with the emergence of the new order (Watson, 2002).

The concepts of CF, CS, and BO also outline the junction of the inner and outer self of the nurse. The concept of caring, while also referred to as a physical task, is a deeply emotional state (Watson, 2008). Caring requires the nurse to allow a piece of their emotional self to become exposed to others (Donald et al., 2019). As a result of exposing one's inner self to others, the nurse places themselves at the risk of secondary trauma or taking on the trauma of someone else (Donald et al., 2019). CF and BO may lead to other physical and mental manifestations, such as depression, anxiety, and maladaptive behaviors such as substance use (Jarrad et al., 2018).

Utilizing Watson's theory, both the inner and outer nurse must coincide in equanimity for the nurse to provide caring-healing (Watson, 2008). Watson also stated, "What you hold in your heart matters" as part caring for the nurse's self and others simultaneously, thus the nurse must balance both (2008, p 189).

There is no research examining the prevalence of or education about CF and BO in flight nurses, thus creating a gap. Understanding that there is a gap in practice for flight nurses, Watson's *Theory of Human Caring* is important to bridging the gap. Currently, flight nurses receive no education on CF and BO and no research exists on CF and BO in the air medical industry. With one major air medical company reporting a turnover rate at 23% (L. Blaine, personal communication, April 5, 2020), which is 5.2% greater than the national average for nurse turnover (Nursing Solutions, Inc. [NSI], 2020), and rates of CF and BO noted to be prevalent in as high at 70% of ICU nurses (van Mol et al., 2015) there is a need to intervene.

Evidence-Based Practice Change Model

The use of an evidence-based practice change model is important to advancing the practice of nursing and allowing nurses to provide input into the care they provide (Reavy & Tavernier, 2008). The use of an evidence-based practice model provides a uniform method and guide for nurses to follow that will provide a framework for sustainability of the interventions (Reavy & Tavernier, 2008). When combined with a nursing theory, the evidence-based practice change model not only identifies a problem, but provides a methodical process to reach the goal of implementation and sustentation.

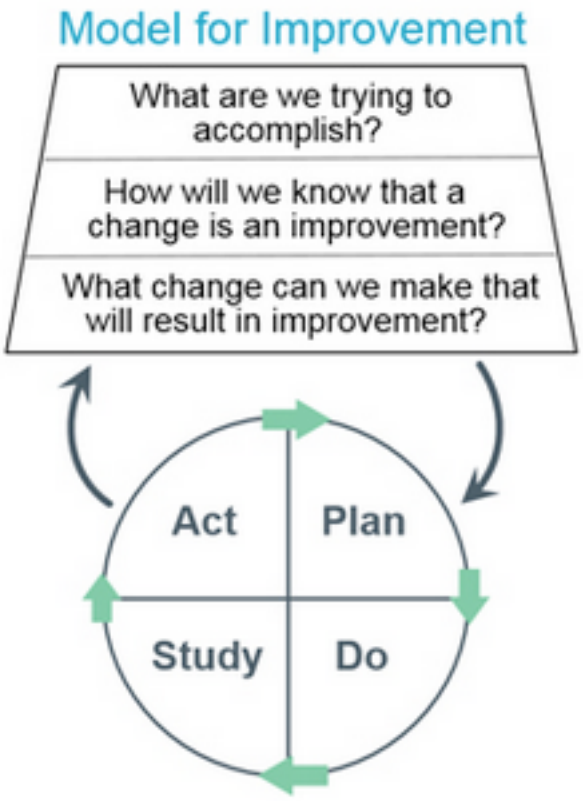
The *Plan-Do-Study-Act* (PDSA) framework is a tool utilized by many organizations to address issues that require intervention (Reed & Card, 2016). Initially created for the industrial settings in the 1920's, the PDSA model has been updated many times since its creation (Reed &

Card, 2016). The purpose of the PDSA framework is to provide a structured method that employs experimental learning that will not only assist in the implementation, but the testing of the changes (Reed & Card, 2016). The use of PDSA in the healthcare environment is useful in the context that PDSA is intended to quickly assess whether a specific intervention works (Reed & Card, 2016). Additionally, the model allows for adjusting the intervention, if needed, and to continue the project using the same model.

For a PDSA cycle to be considered successful, the cycle must be completed (Reed & Card, 2016). Completion of the cycle does not mean that the intervention was effective or useful, as the PDSA framework allows for the intervention to be changed and the cycle restarted (Reed & Card, 2016). Essentially, an effective PDSA cycle results in a learning opportunity no matter the outcome (Reed & Card, 2016). One benefit of utilizing the PDSA model is the ease and simplicity of the model (Reed & Card, 2016). Additionally, the PDSA model allows for a rapid study and intervention to be implemented and tested without many steps (Reed & Card, 2016). Although the PDSA model is simple, it is sophisticated enough to thoroughly evaluate the issue, provide implementation, and evaluate the outcomes of the intervention (Reed & Card, 2016).

Figure 1

Model for Improvement



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The PDSA model for improvement begins with three questions that must be answered before beginning the PDSA cycle (NHS, 2018). The first question is, "What are we trying to accomplish?" For this scholarly project, the goal wishing to be accomplished is a decrease in the level of CF and BO in flight nurses. The second question that must be answered is "How will we know that a change is an improvement?" Evaluating an improvement in this scholarly project will be evaluated based upon quantitative data. Utilizing the ProQOL assessment tool, a decrease in the level of CF and BO on the results will show an improvement. The third question that must

be answered is, “What changes can we make that will result in improvement?” The intervention for this scholarly project is an educational intervention. As there is currently no educational requirement for CF and BO for flight nurses, this is the change that can be made that may result in improvement.

Following the completion of the three questions, the PDSA model begins with planning. Planning a project requires complete evaluation of what is the issue and what is desired (Langley et al., 2009). To thoroughly plan the project, those wishing to initiate change must be objective (Langley et al., 2009). During the planning phase, the change agent must evaluate what questions they wish to have answered and outline what predictions they objectively feel will occur (Langley et al., 2009). Thoroughly planning the who, what, where, and when of the project is also required in the planning phase (Langley et al., 2009). Lastly, what the plan for data collection will be is also required in the first phase (Langley et al., 2009).

The second phase of the PDSA model is to do the project that has been planned (Langley et al., 2009). In the first step, the project was planned out step-by-step which allows for the project to be carried out in meticulous detail in the “do” phase (Langley et al., 2009). During the implementation phase of the project, any issues or problems that arise should be documented (Langley et al., 2009). If anything, unexpected is observed, it is documented as well (Langley et al., 2009). Data is collected in the second phase of PDSA and analysis can begin at the end of phase two (Langley et al., 2009).

The third phase of the PDSA model is to study. The study phase involves completing the analysis of the data that began in the second phase (Langley et al., 2009). A full analysis of the data should be recorded in writing so that it can then be compared to the predictions that were made in phase one (Langley et al., 2009). The results should also be compared with the questions

asked in phase one to evaluate if the data answers the questions that were asked (Langley et al., 2009). Ultimately, the data and the lessons learned are summarized in the third phase (Langley et al., 2009).

The "act" phase of the PDSA model is fourth, but not always the last phase (Langley et al., 2009). Since the PDSA model is designed as a cycle, the fourth phase may not be the last if additional changes are made and the cycle repeats itself (Langley et al., 2009). In the fourth phase, the changes that need to be made are outlined (Langley et al., 2009). Outlining the changes, based upon the analysis of the data in phase three, allows the change agent to decide what is next with the project (Langley et al., 2009). If the project answers the questions and resulted in the change needed, then the next phase if to sustain the change (Langley et al., 2009). However, if further changes are needed, the change agent must then decide how the project will proceed and what additional cycles are needed (Langley et al., 2009).

Pre-Implementation Planning

For any project to be effective and useful, planning must occur. Without planning, the project will take more time than needed and the researcher may not fully understand what needs to be studied or implemented (Moran et al., 2014). Utilizing the ProQOL self-assessment tool through an online survey program, the participant will be asked to complete the self-assessment. Additionally, the participant will complete demographic information and professionally related questions to determine their profession, type of program employed by, and current practice setting. The survey will be advertised through social media marketed to flight nurses and through directed emails to clinical managers that are known within the air medical community. This will allow the area managers to forward the email invitation letter to other flight nurses in their respective areas. The target population is flight nurses within the United States.

After completion of the initial ProQOL self-assessment, the participant will be directed to a video that will include a peer-to-peer presentation on CF and BO. The peer-to-peer presentation will include information specific to flight nurses and methods to prevent and treat CF and BO from peer-reviewed sources. Following the peer-to-peer presentation, the video will continue with a 17-minute video from a mental health expert on CF and BO recognition and interventions. Following the peer-to-peer presentation, the participant will also be directed to download a one-page handout that contains a condensed version of the presentation information to keep in their possession. Thirty days following the completion of the video, the flight nurse will again be directed to take the ProQOL self-assessment through the online survey program. The levels of CF, CS, and BO will be compared between the pre- and post-intervention assessment for statistically significant differences. Proper planning provides an outline and step-by-step procedure that keeps the project moving forward and ensures safety and efficacy. The planning of this scholarly DNP project is thoroughly outlined and discussed to provide a step-by-step outline.

Project Setting

The project setting is the air medical industry in the United States. The air medical industry in the United States includes three major air medical companies and almost 300 additional private companies (Grand View Research, 2017). This includes over 1,300 different aircraft (Grand View Research, 2017). The setting includes aircraft from all geographical areas of the United States, including Alaska, Hawaii, and other United States territories. The project will evaluate flight nurses from many different air medical settings. Air medical settings include both hospital-based and community-based programs. A hospital-based program is defined as an air ambulance service where the ambulance license and flight crew is owned and managed by the

hospital. The aircraft license may or may not be owned by a separate air service company. A community-based program is defined as an air ambulance service where the air ambulance and aircraft licenses and flight crew are completely owned and operated by the air service provider.

Hospital-based programs are frequently different from community-based services in several ways. Flight nurses employed by hospital-based programs are employed by and managed by a hospital. This may result in different levels of training and frequently results in altered schedules. Flight nurses employed by community-based programs are typically employed by an ambulance company, rather than the hospital. Since most ambulance companies are not required to be accredited, unlike hospitals, the standards of care and education may not be equal to hospital-based programs. Additionally, community-based services usually work 24-hour shifts as opposed to 12-hour shifts typically seen in the hospital-based services.

This project will also include programs that are both for-profit and not-for-profit organizations, as defined by the United States tax codes. Furthermore, the project will include programs from both rural and urban areas throughout the country. Rural areas are different from the urban areas due to the population. Flight nurses practicing in rural communities are more likely to have critical patients in their care for much longer than flight nurses practicing in urban areas. This is largely due to the unavailability of advanced care in rural areas. Communities that are rural are less likely to have a level I trauma center or advanced level care, such as an ICU, pulmonologist, or other advanced specialties. As a result, the rural flight nurse must transport the patient much longer to an urban area for advanced care. Since the urban flight nurse is usually located closely to the advanced care center, the urban flight nurse will typically spend significantly less time with the patient.

Organizational/Environmental Assessment of Readiness for Change

The air medical industry is ready for change in the levels of CF and BO for flight nurses. Discussion and presentation from the Air Medical Transport Conference (AMTC), the national conference for the air medical industry, demonstrates this readiness for change. At the 2019 AMTC event, the keynote speaker was a therapist, author, and educator discussing the effects of post-traumatic stress disorder and secondary traumatic stress (AMTC, 2019). This presentation demonstrates that there is a recognized issue that requires intervention. Evidenced by the turnover rate in the largest air medical company in the United States, there is a desire to decrease turnover. While turnover may appear to be strictly a financial decision for the organization, it also has effects on the quality and thus can decrease legal liability for the organization as well. Additionally, flight nurses are also ready for change to prevent maladaptive behaviors.

Interdisciplinary Collaboration/Team Development

Collaboration with other professionals within the air medical industry is important. Initially, contact with other flight nurses and flight paramedics led to the development of the project. Further collaboration with air medical industry experts such as the regional clinical director of an air medical company was also important in the development of the project. Additionally, email discussion and collaboration with a researcher that previously evaluated the effect of education on the level of CF and BO was instrumental.

Stakeholder Engagement

There are many stakeholders in a project evaluating the effect of education on flight nurse levels of CF, CS, and BO. The key stakeholder are the flight nurses as they stand to benefit the most from interventions decreasing CF and BO. However, air medical companies that employ flight nurses also stand to benefit from the project and are stakeholders as well. As this scholarly

project setting is not specific to a single air medical company, all air medical companies would be stakeholders and would be difficult to fully engage. Another stakeholder that is not included in the project, but can benefit from the education and evidence are flight paramedics. Engagement of the stakeholders requires word of mouth engagement to pique interest.

Risk Management Assessment and Strategies to Overcome Barriers

Risks are inherent in any project seeking change. A scholarly project seeking to evaluate the level of CF, BO, and CS in flight nurses poses an inherent risk for the mental health of the flight nurses participating. Secondary traumatic stress or CF may cause events that have led to emotional distress for the flight nurse to return. This risk can be first mitigated by including the risk in the informed consent. Additionally, the flight nurse will be provided with instructions to seek the care of an expert, such as a therapist or physician, in the event that they experience emotional distress during the course of their participation.

Data about CF, CS, and BO pertains to the mental and emotional health of the participant. This data, as with all research data, must be kept confidential. If an inadvertent release of identifiable information were released about a participant, it could be detrimental to the participant's job or emotional health. The project will be performed with de-identified data and will be anonymous. The project tool will be completed utilizing SurveyMonkey® which allows for all data to be anonymous and encrypted. The anonymous nature of the website program will assist to mitigate the risk to the participant.

The participants will be required to enter an email address into the SurveyMonkey® form when completing the consent form. The email address box contains a disclaimer stating that the participants agrees to be contacted for a follow survey in two weeks. Additionally, the disclaimer states that the email address will be used to connect the pre- and post-intervention surveys for the

purposes of the project. Further, the disclaimer states that the email address will be coded into a research ID number to protect the anonymity of the participant. The coded research ID numbers will be kept in a secured file that is password protected and housed on a password protected computer. Participant email addresses will never leave the SurveyMonkey® system and will be coded prior to transfer.

Another risk that may present with the scholarly project is a lack of participants in the study. As the study population is specifically flight nurses in the United States, a limited number of participants could occur. By seeking participants from all air medical companies in the United States, the risk of non-participation can be mitigated. Furthermore, recruiting of participants from very large groups of online flight nurses and by directly contacting managers of flight nurses to cascade the invitation to others will also mitigate this risk.

Risk to both the participant and the project manager can be mitigated with education. The project manager has completed courses within the Collaborative Institutional Training Initiative (CITI) program. The project manager completed and obtained a passing score (Appendix E) on the CITI course titled *Responsible Conduct of Research (RCR)* for social, behavioral, and education sciences. The RCR course contains information on conflicts of interest, authorship, peer review, plagiarism, ethics, and research that involves human subjects. The project manager also completed and obtained a passing scored (Appendix F) on the CITI course *Social Behavioral Educational Researchers*. The *Social Behavioral Educational Researchers* contains information on the Belmont Report, international studies, students utilized in research, federal regulations, protected and vulnerable populations and internet-based research.

Organizational Approval Process

Obtaining approval to perform the scholarly project is required. Organizational approval allows for an organization to review the project and determine if it is a project with which the organization wishes to be associated. Additionally, obtaining organizational approval can ensure that ethical practices are followed for the project. Approval of Aspen University was required to complete this scholarly project. Initial approval of the project was included in the acceptance of the immersion experience approval. An application to the internal review board (IRB) of Aspen University is required prior to implementation of this scholarly project. As this scholarly project will not be performed at a specific site, there is no organizational approval needed from the project site.

The Role of Information Technology

Information technology is vital to the completion of this scholarly project. Starting with the literature review, online journals and texts were reviewed to evaluate the change project and needed resources. The implementation of the scholarly project requires the use of the online survey program, SurveyMonkey®. SurveyMonkey® will allow participants to complete the ProQOL self-assessment anonymously and provide the CF, CS, and BO levels to the participant. Additionally, SurveyMonkey® will allow the participants to provide their demographic information (Appendix G).

After the participant completes the first ProQOL self-assessment, SurveyMonkey® will direct the participant to the educational video on the YouTube ™ website. The participant will view the educational video on YouTube ™ as directed. The SurveyMonkey® website will also direct the participant to view a PowerPoint presentation developed for this project on YouTube™. The PowerPoint presentation will be uploaded with narration. Additionally, the

SurveyMonkey® website will direct the participant to download a single-page PDF that can be printed by the participant and contains an overview of the information presented in the PowerPoint video.

Thirty days following the completion of the educational video, the SurveyMonkey® website will send an email asking the participant to complete the post-intervention ProQOL self-assessment. The post-intervention ProQOL self-assessment will be administered utilizing the same ProQOL self-assessment tool. SurveyMonkey® will provide the aggregate data of responses with the pre- and post-intervention ProQOL level scores via a Statistical Package for Social Sciences (SPSS) by IBM file. The data will then be analyzed utilizing the SPSS program.

Materials Needed for Project

Materials required for the preparation and implementation of this scholarly project include electronic resources. A computer is required for the entire process. The use of the ProQOL survey will occur via the internet and all forms, including the informed consent will be processed electronically. Recruitment and advertisement for the project will also occur electronically utilizing the social media platform, Facebook. The materials required for the implementation of the survey and processing of the data include use of the computer applications SurveyMonkey® and SPSS. As the scholarly project materials will all be available via online resources, there is no need for printed materials and no cost for printing.

Project Cost and ROI

There are minimal costs associated with the implementation of an educational program for CF and BO in flight nurses. SurveyMonkey® charges a fee of $276 for one year of usage for students (SurveyMonkey, 2020). A subscription for SPSS has an associated cost of $99 per

month (IBM, 2020). As statistical analysis should take no more than one month, the cost of the SPSS subscription should be a total of $99. There are no other perceived costs to this project.

The cost savings as a result of implementing this scholarly project are difficult to estimate as a direct effect. However, decreasing the rate of turnover for flight nurses is estimated to save approximately $64,000 (Mason et al., 2014) as a direct result of not having to train a new nurse to the position of flight nurse. Additionally, during the training of the new hire, the air medical organization could incur up to $145,000 in overtime costs (Mason et al., 2014) that would be eliminated if turnover does not occur.

IRB Approval

This project will be submitted to the Aspen University IRB for expedited approval. As this project poses minimal risk to the participant, but does collect survey data on the emotional state of the participant, this project does not meet the requirements of exempt research. IRB approval will be sought prior to implementation of the project intervention. This project requires follow up with the participant to complete a post-intervention survey at two weeks. Additionally, since the project includes pre- and post-intervention assessments, the email address will be utilized to match the surveys together. As a result of the required follow up and the need to connect the pre- and post-intervention surveys, there is a risk of exposure of the participant's email address, which may inadvertently identify the participant. Since the risk to privacy concerns may be a possibility, it will be addressed with the IRB application. Once IRB approval is obtained, the IRB approval letter will be included in Appendix H.

Project Implementation Steps

Project planning is important to ensuring that the phenomenon being evaluated is thoroughly understood and assessed (Moran et al., 2014). Much like the nursing process, the

planning process is cyclical requiring the student to continual reassess and seek additional information until all information is exhausted and the project is implemented and the outcomes analyze and distributed (Moran et al., 2014). Understanding the step-by-step process to be implemented and followed clearly identifies to the project team exactly what will occur throughout the project.

Project Timeline

For the project to progress in a timely manner, a project timeline was created as demonstrated in Appendix I. This scholarly project initiated with a general inquiry into the topic of CF and BO in the air medical community. After initially asking if there is any research on the topic of CF and BO among flight nurses, a question was developed to be answered. Initially, a PICOT question was created seeking further information on the topic. After development of the question and key terms, literature on the topic was sought utilizing multiple databases. After a thorough search of information in databases, consultation with industry experts, such as the regional clinical director the largest air medical company in the United States occurred. The purpose of the consultation was to garner inside information on feelings on the topic and possible interventions to the issue.

After discussion with industry experts and a professor, the project question was created. After creation of the project question, the project requires the ProQOL assessment be entered into the SurveyMonkey® tool. Additionally, the demographics questions have to be created and entered into SurveyMonkey®. Following the creation of the project tool in SurveyMonkey®, the DNP manuscript was sent to the DNP project committee for the project premise to be approved and a letter of approval received (Appendix J). Following premise approval, the project proposal oral defense was completed with the DNP project committee and approval was granted

(Appendix K). After acceptance of the proposal by the DNP project committee, an application to the Aspen University IRB will be submitted for expedited review. After the IRB approval letter is received from Aspen University, the project will be advertised on the Facebook group named *Flight Paramedics & Nurses* for recruitment. The post (Appendix L) will be reoccurring for one week seeking participants and linking to the SurveyMonkey® survey. Additionally, a recruitment letter (Appendix M) will be emailed to known flight nurses from the personal address book of the project manager. Once advertised and open, participants will complete a ProQOL assessment and demographics information. At the end of one week, the survey will be closed. Thirty days following the closure of the survey, SurveyMonkey® will send a follow up email to the email address used by participant.

The participant will then complete the post-intervention ProQOL assessment and demographic information. One week following the opening of the post-intervention ProQOL assessment, the survey will be closed for completion. After the survey is closed, the ProQOL scores will be calculated utilizing the ProQOL manual to provide assessment scores for CF, CS, and BO. The scores and demographic information will be entered into IBM SPSS for evaluation. The last step will be to evaluate, interpret, and report the data.

Project Evaluation Planning

Evaluation of the project will be performed utilizing several steps. The instrument to be used for pre- and post-intervention survey is the ProQOL self-assessment. The ProQOL self-assessment is an instrument developed by Dr. Beth Stamm in 1995 (Stamm, 2010). Since 1995, the ProQOL assessment has been revised and updated with new information multiple times (Stamm, 2010). ProQOL version five is the most current version of the instrument (Stamm, 2010). The ProQOL assessment consists of 30 questions that are answered on a Likert scale of

one to five (Stamm, 2010). The instructions on the instrument state to consider the participant's current work and select a number that accurately reflect how they have felt within the past 30 days (Stamm, 2010). The participant then selects the number that corresponds with their current feeling with one reflecting "never" and five reflecting "very often" (Stamm, 2010).

Utilizing the answers, the participant provides to each question, a score is calculated that falls within a range for level of CF, BO, and CS (Stamm, 2010). Questions 3, 6, 12, 16, 18, 20, 22, 24, 27, and 30 are added together to form the level of CS (Stamm, 2010). Questions 8, 10, 19, 21, and 26 are added together (Stamm, 2010). Questions 1, 4, 15, 17, and 29 are reversed making 5=1, 4=2, 3 remains constant, 2=4, and 5=1 (Stamm, 2010). The reversed numbers are then added to Questions 8, 10, 19, 21, and 26 to form the level of BO (Stamm, 2010). Lastly, questions 2, 5, 7, 9, 11, 13, 14, 23, 25, and 28 are added together to form the level of secondary trauma stress (Stamm, 2010). Utilizing the number associated with all three conditions, the scores pre- and post-intervention will be compared to determine if the level of CF and BO decreased post educational intervention and if the level of CS increased.

Evaluation of the pre- and post-intervention levels are indicative of three factors. If the level of CF and BO in the post-intervention survey decreases, this is indicative of a decrease in CF and BO levels, or an improvement. If the level of CF and BO increases, this is indicative of an increase in CF and BO, or a worsening in CF and BO. If the level of CS increases in the post-intervention survey, this is indicative of an improvement in CS. If the level of CS decreases in the post-intervention survey, this is indicative of a decrease or worsening in CS.

The sample size will be estimated utilizing a representation of the current population of flight nurses. In the United States, approximately 4,300 nurses hold the Certified Flight Registered Nurse (CFRN) board certification (BCEN, 2020). Although 4,300 nurses hold the

certification, approximately two-thirds of the CFRN's in the United States currently serve in the role of flight nurse. This is based upon the number of currently licensed helicopter air ambulances registered with the Federal Aviation Administration (FAA) (2014). Utilizing a population size of 3,000 flight nurses, the sample size will be calculated using the G* Power 3.1 sample size calculator. Utilizing a confidence level of 95%, with a 5% error probability, and Cohen's Effect size of 0.8 for a large group, the sample size estimation is 45 flight nurses.

Evaluation Tools and Strategies

The ProQOL assessment is a survey instrument that has been validated and is reliable for indicating the levels of CF, CS, and BO among the "helping" professions. The ProQOL manual states the following about validity:

> There is good construct validity with over 200 published papers. There are also more than 100,000 articles on the internet. Of the 100 published research papers on compassion fatigue, secondary traumatic stress, and vicarious traumatization, nearly half have utilized the ProQOL Scale or one of its earlier versions. The three scales measure separate constructs. The Compassion Fatigue scale is distinct. The inter-scale correlations show 2% shared variance (r=-.23; co-σ = 5%; n=1187) with Secondary Traumatic Stress and 5% shared variance (r=.-.14; co-σ = 2%; n=1187) with Burnout. While there is shared variance between Burnout and Secondary Traumatic Stress the two scales measure different constructs with the shared variance likely reflecting the distress that is common to both conditions (Stamm, 2010, p 13).

The ProQOL assessment is designed in a Likert-type survey that includes responses one to five (Stamm, 2010). The participant selects the number on the Likert scale that honestly reflects how the participant feels about the question being answered. The responses for all

questions are: 1=Never, 2=Rarely, 3=Sometimes, 4=Often, and 5=Very Often (Stamm, 2010). A score of 42 or higher indicates high levels of CS, CF, or BO on the individual scores (Stamm, 2010). The instrument can be viewed in Appendix N.

Permission to utilize the ProQOL assessment in any format is included on the ProQOL assessment website. The ProQOL assessment website and the instrument itself (Appendix N) states that the survey may be utilized at will with the understanding that the author must be credited, it is not changed, and the instrument is not sold (ProQOL.com, 2019). Additionally, the website states that the instrument may be reformatted to online format as long as the content remains the same (ProQOL.com, 2019).

Included in the peer-to-peer educational intervention tool is a TedTalk video titled *How to Manage Compassion Fatigue in Caregiving | Patricia Smith | TEDxSanJuanIsland* (TEDx Talks, 2017). Ms. Smith is the founder of the Compassion Fatigue Awareness Project and is an expert on the topic of CF (Compassion Fatigue Awareness Project [CFAP], 2017). Ms. Smith is a CF Specialist with over 20 years of experience (CFAP, 2017). Additionally, Ms. Smith is an awarded author of four books and two training manuals on CF (CFAP, 2017). The intervention tool is a freely accessible video available through the website YouTube.com. The video includes not only a video and audio presentation, but is also available as a transcript through YouTube.com (Appendix P). Permission to utilize and embed the TedTalk video into the compassion fatigue and burnout presentation are contained in Appendix Q.

Collection Data for Baseline and Post Implementation Analysis

The steps for accurate and appropriate collection of data begins prior to the use of any tools or evaluations. Utilizing human subjects requires multiple permissions to ensure that the participants are accurately informed of what they are participating in and what the associated

risks may be. Beginning with recruitment, flight nurses will be recruited by the project manager utilizing social media pages devoted specifically to flight nurses. When a flight nurse decides to participant, the flight nurse will select an URL link that will take the flight nurse to the SurveyMonkey® website. The first screen that the flight nurse will view is an explanation of the research study, what will be required, and the informed consent form. The potential participant will be required to review the explanation and consent form (Appendix R) and then select a button stating that the flight nurse consents to participation and the informed consent. If the potential participant clicks that they do not wish to consent, the website will display a message stating that the potential participant is thanked for their time.

Once the potential participant consents to the project, the participant will be directed to the second screen. The second screen will begin the demographics questions. The participant will select the correct answers that reflect their accurate demographics (Appendix G). After selecting the demographics answers, the participant will be directed to the electronic ProQOL assessment, which is an exact replica of the paper version (Appendix N), except in the electronic format. The participant will complete the ProQOL assessment and select submit. After the ProQOL has been submitted, the participant will be directed to a thank you page. The thank you page will instruct the participant to select a URL that will direct the internet browser to the education video. The participant will then watch the video.

Thirty days after the close of the survey, the project manager will direct SurveyMonkey® to email the participants a reminder to complete the post-intervention ProQOL assessment. The participant will select a URL from the email to complete the follow up survey. The participant will be directed to an acknowledgement page that requires the participant to acknowledge that they previously consented and wish to continue participation in the project. After selecting that

the participant does consent, the web browser will redirect to the ProQOL assessment. The participant will then complete the ProQOL assessment, as noted in Appendix N. After the participant has completed the survey, the participant will select submit and a message thanking the participant for their participation will be displayed.

At the close of the project week, the project manager will close the survey in SurveyMonkey® and begin to collect the data. The results of the data will be collected from SurveyMonkey® via file export. This data will be entered into SPSS for evaluation. To prevent possible mistakes in the data, the data will be directly imported from the SurveyMonkey® system in an attempt to maintain its integrity. Additionally, the file containing the data will be encrypted by SurveyMonkey® and will be password protected in the file and on the computer. As there is no physical consent form, there will be no forms to save with identifiable information. However, the SurveyMonkey® website will maintain the confidential data, such as email address and IP address, within its system. Additionally, since there is no specific data collection site, no permissions are needed by sites for data collection.

Data Management and Analysis Methods

Data Management Methods

The data management plan includes comprehensive steps to ensure that participant information and data collected is kept confidential. Starting with the initial collection of data, the SurveyMonkey® website utilizes secure storage in a Service Organizational Control (SOC) 2 accredited data center (SurveyMonkey, 2020A). A SOC 2 accredited center meets the highest standards for securely storing data (SurveyMonkey, 2020A). Additionally, the SurveyMonkey® website ensures that all data transmitted across the website is secured through an HTTPS connection (SurveyMonkey, 2020A). Further, user login information is protected through use of

a TLS through the SurveyMonkey® website (SurveyMonkey, 2020A). All data maintained through SurveyMonkey® is encrypted through encryption algorithms and strengths that are an industry standard (SurveyMonkey, 2020A). Personal information obtained from SurveyMonkey®, from both the participant and researcher, is never sold and encrypted just as the data collected is (SurveyMonkey, 2020A). The computer used to house the data will be password protected with an alpha-numeric passcode only known to the project manager.

The data collected and analyzed will be kept for three years following the completion of the scholarly project. Following the three-year holding period, the data will be destroyed by deleting from the computer. Additionally, the researcher will ensure that the file containing the data is removed completely from the computer, including the recycle bin. Throughout the entire project, data will be maintained on a single computer belonging to the researcher and password protected. The password will be known only to the researcher.

Data Analysis

Analysis of the data collected will be performed to determine if a peer-to-peer educational intervention is effective in decreasing the level of CF and BO and increasing the level of CS in flight nurses. Both demographic information and the answers to each question on the ProQOL assessment will be entered into SPSS. Data entered into SPSS will be coded into numerical format as outlined in table 1. The code table was designed utilizing the variable to be entered into SPSS. In progressing order, the demographic variables were assigned a numeric value. Demographic variables were assigned names by shortening the full name.

The demographic data will be characterized with descriptive statistics. Both nominal and ordinal data will be described by the frequency and percentage. The data from the ProQOL assessment tool will be described with the total score from the three subscale sections, CF, BO,

and CS. The raw score will be described with the numerical value. Use of the raw score will be utilized for both the pre- and post-intervention ProQOL assessment tools. The ProQOL assessment scores pre- and post-intervention will be coded with separate ending letter with PR being pre-intervention and PO being post-intervention. This will allow the variables to be easily identifiable and individualized.

The difference between the pre- and post-intervention ProQOL assessments will be compared by determining if there was an increase or decrease in each of the subscales. The pre- and post-intervention scores will be compared and correlated to determine if the intervention was successful in decreasing the level of CF and BO. Additionally, the pre- and post-intervention ProQOL assessments will be compared to evaluate if there was an increase in CS following the intervention. Null hypothesis indicates that education does not affect the levels of CF, BO, and CS.

Ethical Considerations

Great consideration is given to ensuring the safety and health of the individual participants. Confidentiality will be maintained by encryption processes through the SurveyMonkey® website and by password protection on the project computer. The project consists of completing a survey that may pose a psychological risk to the participant by requiring the participant to examine their levels of CF and BO. Evaluating secondary traumatic stress may trigger past traumatic events for the participant. The risk of negative outcome from participating is mitigated in the informed consent by a statement outlining that the participant should seek expert advice from a licensed psychologist, therapist, or medical professional should the participant experience negative issues. As a result of the protections in place, this scholarly project should be deemed a minimal risk to the participants. Additionally, this project poses no

more risk than would be ordinarily encountered during daily life or during a routine psychological examination visit. Additionally, the project manager completed the Collaborative IRB Training Initiative (CITI) curriculum entitled *Responsible Conduct of Research* (Appendix E) and *Social Behavioral Educational Researchers* curriculum (Appendix F).

Summary

Implementation of this quasi-experimental scholarly project on CF and BO in flight nurses will be performed utilizing social media and an online survey website. The design, implementation and analysis will be guided by both Watson's *Theory of Human Caring* and *The Plan-Do-Study-Act* framework. Utilizing Watson's theory ensures that the patient remains the center of everything a nurse does. Furthermore, the concepts of CF and BO originate from the emotional being of the nurse, a portion of the nurse that Watson theorized was one of the most important parts. The PDSA model outlines a methodical method for examining, implementing, and evaluating a change practice that can be done by the staff level nurse.

The planning process outlines each step in the project. The setting is an open project that includes flight nurses in the United States, regardless of their practice type. Additionally, the setting will include flight nurses from all geographical backgrounds within the United States. From searching the available data, the air medical industry is ready for change due to large amounts of turnover. With a lack of education in place for flight nurses on the topic of CF and BO, many flight nurses resort to maladaptive behaviors, with recognition of this being outlined at the air medical industry's national conference, AMTC.

While there is a risk involved in every research study, the use of safeguards can minimize the risk to the participant. Through the use of encrypted data and secure websites, this project will mitigate the risk of harm to the participants by protecting the personal information and

project data. Additionally, the project requires expedited review by the IRB of Aspen University to ensure that the participants will not be harmed.

Chapter Four: Results of EBP QI Project

Compassion fatigue and burnout are issues that have plagued the nursing industry for many years. Likewise, CF and BO affect flight nurses similarly in incidence to that of their ICU and ED counterparts. Given the risk of CF and BO to flight nurses, this DNP project was important in providing education for flight nurses on the risk of CF and BO. In addition to education on CF and BO, this DNP project sought to evaluate if a peer-to-peer educational intervention would be effective in decreasing the level of CF and BO and increase the level of CS in flight nurses. The results that follow show the level of CF and BO that was present among flight nurses in the United States. The results will also show that peer-to-peer education was effective in decreasing the levels of CF an BO.

Summary of Project Analysis

The analysis of data evaluating the effect of education on the levels of CF and BO in flight nurses was completed utilizing the IBM Statistical Program for Social Sciences (SPSS) version 27 program. To protect the privacy and integrity of the data, and blind the results, the data were processed by assigning the participants a unique participant identification number. After the unique participant identification number was assigned, the project manager then replaced the email address of the participant with the participant identification number on the pre- and post-intervention spreadsheet. The participant identification numbers were then matched from the pre- and post-intervention spreadsheets onto a single spreadsheet. The participant identification numbers and data were checked twice before transferring to the final spreadsheet to ensure accuracy in the results.

To calculate the scores of the ProQOL assessment subsets, a formula was developed within the spreadsheet. The equation for the pre- and post-intervention scores of each subset, CF,

BO, and CS, was checked twice to ensure accuracy of equation. The formula was created utilizing the directions of the ProQOL assessment contained in the *ProQOL Concise Manual*. After the CF, BO, and CS subset scores were calculated, the subset scores and demographic data was transferred into the SPSS program for evaluation. Utilizing the assistance of Statistician, the results were evaluated to determine the statistical differences between the pre- and post-intervention scores.

A total of 37 participants agreed to participate in the project and completed the informed consent form (Appendix R). Of the 37 participants that completed the informed consent form, 36 of the participants completed the pre-intervention ProQOL assessment (Appendix N). One of the participants accepted the informed consent, but did not complete the measure. The 36 participants then completed the one-hour educational video on CF and BO in flight nurses (Appendix P) and downloaded the CF and BO brochure for flight nurses (Appendix S). Of the 36 participants that completed the pre-intervention assessment, 34 of the participants returned thirty days later to complete the post-intervention ProQOL assessment. The participant that did not complete the pre-intervention assessment and the participants that did not complete the post-intervention assessment resulted in a sample total of 34 participants being entered into the results.

Additionally, three of the participants that completed the informed consent declined to provide their demographic data. However, the three participants that declined to provide their demographic data did complete the pre- and post-intervention ProQOL assessments. Thus, the number of participants providing demographic data was a sample of 31.

Anticipated Outcomes

The anticipated outcome of the DNP project was the same as the goal of the project. The intended outcome was to decrease the levels of CF and BO, while increasing the level of CS in flight nurses. The *ProQOL Concise Manual* divides the three separate measures in three levels of low, moderate, and high levels. While the measure categorizes the scores into levels, this DNP project sought to simply decrease the number level of CF and BO, not the category level. A decrease in the mean level of CF and BO was the anticipated outcome of this project.

Actual Outcomes

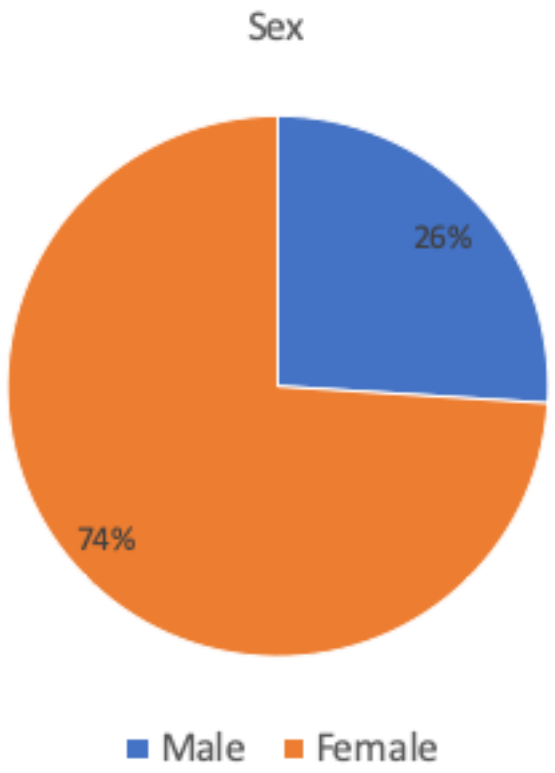
The results of this DNP project showed that there was an overall decrease in the mean level of CF and BO among the participants after the peer-to-peer educational intervention. However, the mean decrease was not statistically significant. Although the overall mean decrease in levels of CF and BO was not statistically significant, the decrease in CF and BO in the female participants was significant. The outcome for female participants showed a significant improvement in the levels of CF and BO.

Summary of Demographic Data

Thirty-one participants provided answers to the demographic questions. Of the 31 participants that provided demographic information, 23 of the participants (74%) were female and 8 of the participants were male (25.8%).

Figure 2

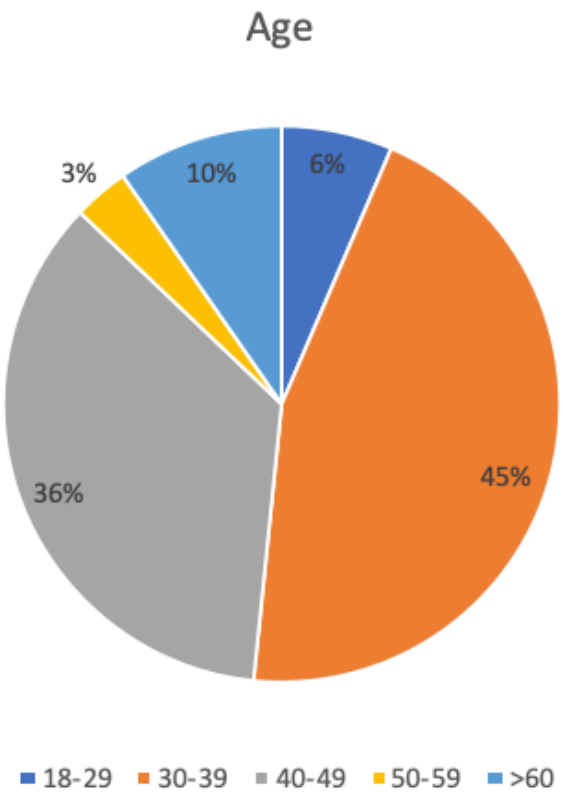
Participant Sex



There was a wide variety of age groups that participated in the project. The age group that had the largest number of participants was the group ages between 30 and 39 years of age. Forty-five percent of the participants were between the ages of 30 and 39, representing the largest group of participants in the project. The second largest group of participants were between the ages of 40 and 49 years of age representing 35.5% of the participants. The smallest age group of participants was between the ages of 50 and 59 years of age. There was only one participant in the 50-59 years age group.

Figure 3

Age Grouping of Participants



The predominant number of participants in the DNP project had more than six years of experience as a nurse. More than half of the participants had more than 10 years of experience in the field of nursing. Additionally, almost 20% (N=6) of the participants had more than 20 years of experience as a nurse. However, the majority of the participants had less than eight years of experience as a flight nurse, representing 77.4% (N=24) of the participants. Flight nurses with more than eight years of experience represented only 22.6% (N=7) of the participants. Additionally, 38.7% (N=12) of the participants had three or less years of experience as a flight nurse.

Table 1

Years of Experience as a Nurse

Years	N	%
0-5 Years	4	12.9%
6-10 Years	7	22.6%
10-15 Years	10	32.3%
15-20 Years	4	12.9%
>20 Years	6	19.4%

Table 2

Years of Experience as a Flight Nurse

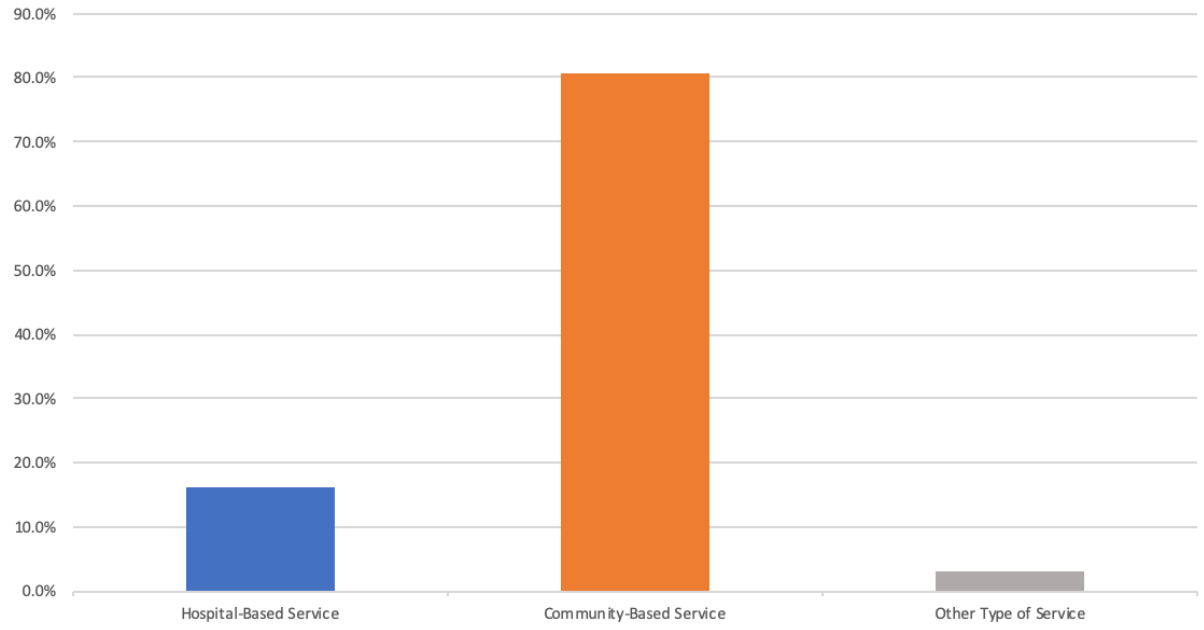
Years	N	%
0-3 Years	12	38.7%
4-8 Years	12	38.7%
9-15 Years	4	12.9%
16-20 Years	1	3.2%
>20 Years	2	6.5%

The principle type of program that participants work for was a community-based service, with 80.6% (N=25) selecting the community-based program option. Only one participant (3.2%) selected that they worked for an "other type of service." An "other type of service" could be defined in many methods and the participant provided the detail of "alternative based model" in

the free-text comment box. Sixteen percent (N=5) of the participants were employed by a hospital-based flight program.

Figure 4

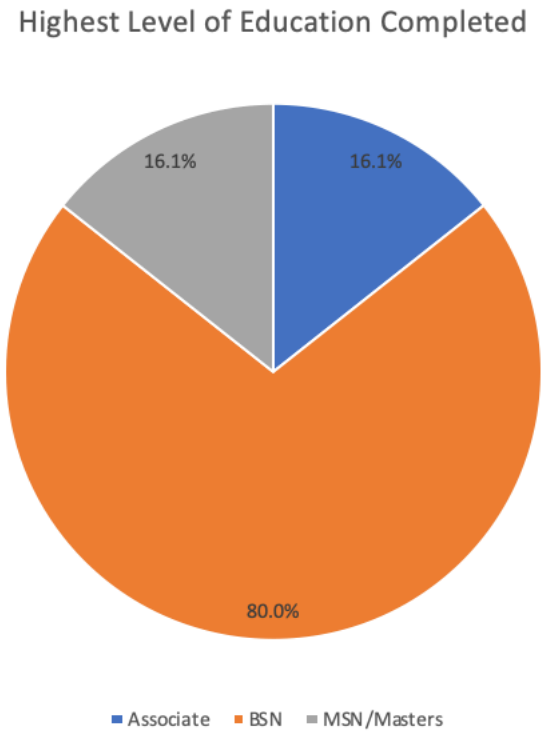
Service Model



Most of the participants in the DNP project had a bachelor's degree in nursing (BSN), representing 67.7% (N=21) of the participants. Sixteen percent (N=5) of the participants had an Associate Degree in Nursing (ADN) as their highest level of education. Additionally, 16.1% (N=5) of the participants retain a Master of Science in Nursing (MSN) or a master's degree as their highest level of education. There were no participants with a doctoral or post-graduate level degree in the participants.

Figure 5

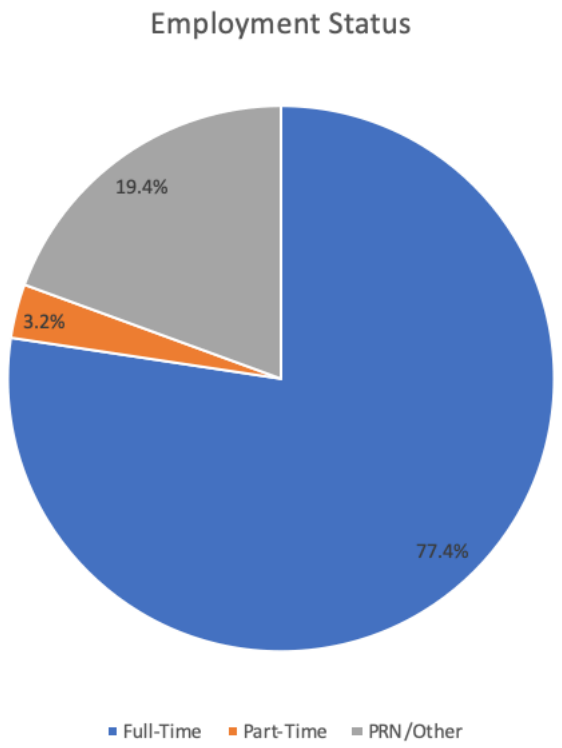
Highest Level of Education Completed



The majority (77.4%) of the flight nurses participating in the DNP project work full-time as a flight nurse. Only one (3.2%) of the participants stated that they worked part-time as a flight nurse. A larger number (N=6) of participants stated that they work PRN (as needed) or some other configuration of scheduling, representing 19.4% of the sample group.

Figure 6

Employment Status



Pre- and Post-Intervention Compassion Fatigue

As part of the analysis, the pre-intervention CF subset score (CFPR) was compared against the post-intervention CF subset score (CFPO). By status quo, one would assume that the mean value of both CFPR and CFPO. An alpha of 0.05 would be considered for analysis, indicating that the results that were obtained post-analysis would have a 95% confidence level. As both CFPR and CFPO deal with the same participants before and after interventions, they are dependent on each other. Hence a paired T-test was performed with the hypothesis as:

H0: The mean CF level before and after intervention is the same.

Ha: The mean CF level before and after intervention is not the same.

After analysis, the significance value was checked and if Sig<0.05, the null hypothesis is rejected and the null hypothesis would be accepted if Sig >0.05. The results of the paired T-test looked as follows:

Table 3

CFPR Versus CSPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CFPR	21.4516	31	8.11927	1.45826
	CFPO	17.8065	31	10.13384	1.82009

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CFPR - CFPO	3.64516	13.27290	2.38388	-1.22338	8.51370	1.529	30	.137

Evaluating the mean of CFPR, it is 21.45, whereas the mean of CFPO is 17.80. Although there is a decrease in the mean CF level, it is not statistically significant. As the Sig is >0.05 (0.137), the null hypothesis would be accepted concluding that the mean CFPR is similar to that of CFPO.

Pre- and Post-Intervention Burnout

As part of the analysis, BO pre-intervention level was compared against the post-intervention BO level. By status quo, one would assume the mean value of pre-intervention BO (BOPR) and post-intervention BO (BOPO). An alpha of 0.05 would be considered for analysis indicating the results that were obtained post-analysis would be a confidence level of 95%. As both BOPR and BOPO deal with the same participants before and after intervention, they are

dependent on each other. Hence a dependent T-test or paired T-test are performed with the hypothesis as:

H0: The mean of BOPR and BOPO is the same.

Ha: The mean of BOPR and BOPO is not the same.

After analysis, the significance value was checked and if Sig <0.05, the null hypothesis is rejected and if the Sig >0.05, the null hypothesis would be accepted. The results of the paired T-test would look as follows:

Table 4

BOPR Versus BOPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BOPR	19.7419	31	7.43401	1.33519
	BOPO	17.6129	31	10.03885	1.80303

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BOPR - BOPO	2.12903	13.26334	2.38217	-2.73600	6.99406	.894	30	.379

On checking the mean of BOPR, it is 19.74, whereas the mean of BOPO is 17.61. Thus, the Sig value is 0.379. As the Sig is >0.05, the null hypothesis is accepted, concluding that BOPR is similar to that of BOPO.

Pre- and Post-Intervention Compassion Satisfaction

As part of this analysis, the pre-intervention CS (CSPR) level was compared against the post-intervention CS (CSPO) level. By status quo, one would assume the mean value of CSPR

and CSPO. An alpha of 0.05 would be considered for analysis, indicating that the results that are obtained post analysis would have a 95% confidence level. As both CSPR and CSPO deal with the same respondents before and after intervention, they are depended on each other. Hence a dependent T-test or paired T-test would be performed with the hypothesis as:

H0: The mean CS level before and after intervention are the same.

Ha: The mean CS level before and after intervention is not the same.

After analysist, the significance value was checked and if Sig <0.05, the null hypothesis would be rejected and the null hypothesis would be accepted if Sig >0.05. The results of the paired T-test look as follows:

Table 5

CSPR Versus CSPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CSPR	39.68	31	11.487	2.063
	CSPO	32.61	31	16.929	3.040

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CSPR - CSPO	7.065	20.035	3.598	-.284	14.413	1.963	30	.059

On checking the mean of CSPR, it is 39.68, whereas the mean of CSPO is 32.61. There is decrease in the mean CS level. On checking the Sig. value, it is 0.059 which is greater than 0.05, thus the null hypothesis is accepted. The null hypothesis thus concludes that CSPR and CSPO are similar.

Comparing Results with Demographics Data

When comparing the pre- and post-intervention results among the demographic information, the majority of the comparisons were not statistically significant. Among the male participants, there was no statistically significant difference between the pre- and post-intervention ProQOL assessment subset scores in CF, BO, and CS. However, the pre-intervention CS for females was 42 (N=21) compared to the post-intervention score of 30.86 (N=21). This is a sig. of 0.011 and thus the null hypothesis would be rejected. Thus, female participants had a decrease in CS.

Table 6

Female CSPR Versus CSPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CSPR_Female	42.0000	21	4.37035	.95369
	CSPO_Female	30.8571	21	18.12812	3.95588

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CSPR_Female - CSPO_Female	11.14286	18.20793	3.97330	2.85471	19.43101	2.804	20	.011

Comparing the pre- and post-intervention BO levels among female participants showed a decrease in the level of BO. The data was filtered by female and considered for a paired T-test.

H0: The mean of BO level for female before and after intervention is the same.

Ha: The mean BO level for female before and after intervention is not the same.

The mean pre-intervention score (BOPR) for female was 22.48 (N=21) versus the post-intervention score (BOPO) of 16.9 resulting in a Sig. of 0.027, thus the null hypothesis is rejected.

Table 7

Female BOPR Versus BOPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BOPR_Female	22.4762	21	4.89509	1.06820
	BOPO_Female	16.9048	21	10.30973	2.24977

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	BOPR_Female - BOPO_Female	5.57143	10.73579	2.34274	.68456	10.45830	2.378	20	.027

Comparing the pre and post-intervention mean scores of female subsets in CF, there was a statistically significant decrease in the level of CF. The pre-intervention CF score (CFPR) was 24.95 (N=21) compared to the post-intervention (CFPO) mean score of 17.43. Thus, the null hypothesis of the before and after score is the same, is rejected.

Table 8

Female CFPR Versus CFPO

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CFPR_Female	24.9524	21	4.86288	1.06117
	CFPO_Female	17.4286	21	10.87921	2.37404

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CFPR_Female - CFPO_Female	7.52381	11.63881	2.53980	2.22589	12.82173	2.962	20	.008

Comparing the pre- and post-intervention mean scores of all three subsets (CF, BO, and CS), between age groupings, experience as a flight nurse, and experience as a registered nurse resulted in no statistically significant difference in the means scores. Thus, the null hypothesis that there was no change between the mean pre- and post-intervention scores must be accepted.

Implications for Nursing Practice

There are several implications to the field of nursing and flight nursing from this DNP project. There was a slight decrease in the mean pre- and post-intervention scores. The results demonstrated the significance of providing education to flight nurses on CF and BO. Thus, nursing leaders in the air medical industry should seek additional methods to educate flight nurses about the risks, methods for prevention, and results of CF and BO. Given that previous research demonstrated a correlation between CF and BO and the rate of turnover or intent to leave, nursing leaders and society at-large should care to decrease the levels of CF and BO in all

nurses. The findings of this DNP project can be utilized to perform further research studies on the effect of educational interventions on the levels of CF and BO in flight nurses.

Limitations

There were several limitations that presented themselves during this DNP project. While there was a significant amount of data about CF and BO in nurses, there was no research on the topic of CF and BO in flight nurses. With no available research available in the field of flight nursing, there was no data for comparison. Additionally, there was limited data available on the effect of education on the levels of CF and BO. While there was one study that specifically studied the effect of education on CF and BO levels, it was performed in emergency nurses and was more than five years old. Furthermore, the discovered research project intervention was performed in-person and was approximately four hours in length, compared to this DNP project that was performed online and was one hour in length.

Another limitation that must be considered was the inability of the project manager to ensure that the participants actually completed the educational intervention. Due to the project being performed completely online, there was no way to ensure that the participants actually followed the links on the SurveyMonkey® link. There remains a possibility that the participants completed the pre- and post-intervention ProQOL assessments without completing the peer-to-peer educational activity.

The desired sample size utilizing Cohen's Effect was 45 flight nurses. However, the actual sample size was 31. The decreased sample size, due to a lack of willing participants, means that the project may not accurately reflect the results of all flight nurses. The lack of participants in the project could have been related to the decreased amount of time that the initial assessment was open. To move the project forward at a pace that would allow the completion of

the project for course limitations may have decreased the number of participants that were recruited.

Summary

The results of this DNP scholarly project demonstrated that education can have an effect on the levels of CF and BO in flight nurses and was evidenced by the overall decrease in the mean CF and BO scores. Additionally, when the scores were broken down between male and female participants, the female group had a statistically significant decreases in the levels of CF, BO, and CS. However, there was no statistically significant difference when analyzed among the remaining demographic data. Although the results may be skewed due to the limitation in number of participants, there is enough data to encourage future studies into education as an intervention for CF and BO.

Chapter Five: Discussions and Conclusions

With the well-established fact that nurses have a higher-than-average risk of compassion fatigue and burnout, there have been many research studies on the identification and treatment of CF and BO among nurses. Nurses from many different specialties, from oncology and pediatrics, to emergency and intensive care unit, have been studied and surveyed about their rate of CF and BO. This is the first scholarly project of this kind that addressed the issue of BO and CF in flight nurses, since no research currently exists on CF and BO in flight nurses. As a unique specialty in the nursing field, flight nurses provide care and support to patients experiencing traumatic events in a very unique environment than other nursing specialties. By providing a peer-to-peer educational intervention, the level of CF and BO can be decreased among flight nurses.

Discussion of Findings and Best Practices

Nurses, as the most-trusted profession in the United States, provide care to patients during the most traumatic periods of many patient's lives (Foli & Thompson, 2019). However, to provide the care needed, nurses frequently care for the needs of other before taking care of themselves (Mattioli et al., 2018). Additionally, caring for others along with general workplace issues such as, staffing issues, managerial interactions, workloads, and feelings of reduce personal accomplishments lead to the issues of CF and BO (Rushton et al., 2015).

It is well-established that CF, a condition that can exist alone or in combination with BO, exists among ICU and ED nurses (van Mol et al., 2015; Nolte et al., 2017). As many as 40% of ICU nurses may be suffering from CF (van Mol et al., 2015). Contributing to the rates of CF and BO for nurses are perceived issues relating to how nurses manage their work-life balance (Hunsaker et al., 2015; Kelley et al., 2015; Ruiz-Fernandez et al., 2020). Simply providing care

for patients with life-threatening or life-altering medical conditions placed the nurse at risk for development of CF and BO (Ruiz-Fernandez et al., 2020).

This DNP project highlighted that nurses that provide care for patients with life-altering or life-threatening conditions are at risk for CF and BO. The mean CF score for all participants prior to the project intervention was 21.45. The *ProQOL Concise Manual* states that a CF score 22 or greater is considered a moderate level of CF (Stamm, 2010). This level of CF pre-intervention indicates that half of the participants have moderate levels of CF. Additionally, when evaluating female participants only, the pre-intervention mean CF score was 24.95, indicating that female participants had a moderate level of CF.

Caring as a profession, such as the care that flight nurses provide, places the caregiver at risk in agreement with Watson's *Theory of Human Caring.* As demonstrated in Watson's theory, flight nurses connect with the patient at a level that may not necessarily be physical, but still has an impact on the nurses' emotional persona (Watson, 2002). At the core of Watson's *Theory of Human Caring* is the need to balance between the kindness of the nurse to the patient and the nurse's self (Watson, 2002). This concept was also shown by the pre-intervention CF and BO levels in flight nurses.

Use of education as an intervention for CF and BO was discussed in several studies (Donald et al., 2019; Flarity et al., 2013). Studies that utilized a compassion-based program with multiple delivery modalities and a study specific to ED nurses were effective in decreasing the level of CF and BO in those participants (Donald et al., 2019; Flarity et al., 2013). While there are differences between the previous studies and this DNP project, the goal was similar. Flarity et al. (2013) showed a 19% improvement in the level of CF among ED nurses, and the results of

this DNP project were similar with a 17% decrease in the mean CF level. Among the female participants, there was an approximately 30% improvement in the mean CF level.

A finding that contrasted with the study by Flarity et al. (2013) was the BO levels. In the study by Flarity et al. (2013) the participants showed a 34% improvement in BO levels. However, in this DNP project, the participants showed an approximately 11% improvement in BO levels. While there was an improvement in the BO, it was not statistically significant. Of particular interest in this DNP project was the change in CS pre- and post-intervention. Flarity et al. (2013) found that there was 10% increase in the level of CS after the educational intervention. However, in this DNP project, the level of CS actually decreased post-intervention, although not significantly. The pre-intervention CS level was 39.68, but the post-intervention CS level was 32.61, representing a 17.8% decrease in CS. It is also worth noting that both pre- and post-intervention CS levels are considered moderately compassion satisfied.

Since no research exists on the prevalence or interventions for CF and BO in the air medical community, this DNP project is significant in providing the data needed to further education on CF and BO in flight nurses. With nurses at risk for psychological conditions such as anxiety and depression, and increasing numbers of nurse suicides, education for nurses to prevent and treat CF and BO is more important than ever before (Bourgault, 2019). Teaching flight nurses to recognize CF and BO and how to deal with CF and BO is important to the continued safety of flight nurses. While flight nurses have ultimately benefited from this DNP project, it may also influence practices for other professionals in the air medical industry, including flight paramedics, flight respiratory therapists, and flight physicians.

Implication for Practice and Future Projects

More research is needed on the topics of CF and BO in the air medical community. Mandating education on the topics of CF and BO for all flight crew members is an important step to ensuring that flight nurses gain a better understanding of the signs and symptoms of CF and BO. Additionally, flight nurses should be taught where they can go to seek assistance with the treatment of CF and BO and how to continually assess one's self. The DNP project manager plans to discuss the findings of this DNP project with the human resources department at their employer and seek annual education for all employees. Furthermore, the DNP project manager will seek to be involved in developing and teaching the education for all flight crew members.

Plan for Dissemination

This DNP project will be submitted for publication in the *Air Medical Journal* for publication. The *Air Medical Journal* is the journal of the transport industry (2020). The *Air Medical Journal* represents the joint ventures of the Air and Surface Transport Nurses Association (ASTNA), the Air Medical Physician Association (AMPA), the Association of Air Medical Services (AAMS), National EMS Pilots Association (NEMSPA), and the International Association of Flight and Critical Care Paramedics (IAFCCP) (2020). The *Air Medical Journal* is published online and in print on a bi-monthly basis (2020).

Additionally, the DNP project manager plans to present the project at the Air Medical Transport Conference in the fall of 2021 as a podium speaker. The project information, including the research on methods for recognizing and treating CF and BO, will be developed into a presentation for an educational session. The educational session will also include the DNP project results and the need for additional research projects.

Sustaining Change

To keep the conversation going on the topic of CF and BO in the air medical industry, the DNP project manager will continue discussing the topic with fellow flight nurses and flight paramedics. To sustain the change, flight crew members and air medical companies must align their cultures with that of organizations that wish to have the most emotionally healthy nurses to provide care to patients. To foster a change in culture, education must be developed and implemented by air medical companies. For minimal cost, air medical companies can easily create educational sessions for the flight crew members as part of the annual competency requirements. Additionally, the educational sessions can include access to the employee assistance program (EAP) that most employers already provide.

Recommendations for Future Projects and Practice

As a result of this DNP project, there are several future research projects and practices that could be further studied or implemented. One of the interesting discoveries in this DNP project was that there appeared to be a difference between how the education affected male and female participants. The male participants did not appear to be affected as much and had a nominal change in the pre- and post-intervention CF, BO, and CS levels. Understanding the difference between the male and female participants would further advance scientific knowledge but allowing educators to tailor the education to the participant genders.

There are currently no prevalence studies on the presence of CF and BO in the air medical community, among all professionals. The air medical industry is made up of many different professionals, including nurses, paramedics, pilots, mechanics, physicians, and respiratory therapists. All of these professionals, with the exception of mechanics, frequently interface with the patient experiences life-threatening or life-altering conditions. Studying the

prevalence of CF and BO among these professionals will provide air medical companies an understanding of who the education should be tailored to and how to prevent further increases in turnover. Prevalence data will also further contribute and advance scientific knowledge in the nursing community by further understanding how many nurses assess with moderate and high levels of CF and BO.

An additional practice that would further enhance the nursing profession is inclusion of the topic of CF and BO in the Air and Surface Transport Nurses Association's (ASTNA) textbook. The *Patient Transport: Principles & Practice* manual is the textbook of ASTNA and includes all principles of transport for flight nurses. One air medical company provides this text to all new employees during orientation. Additionally, each base of operation in the same company has this text available for all employees to utilize. Including research and education on CF and BO in the ASTNA text would provide scientific data to the flight crew members and provide the information needed to further prevent and treat those crew members suffering from CF and BO.

Actual DNP Essentials Met

The AACN (2006) outlined the essentials needed to obtain the Doctor of Nursing Practice (DNP) degree in *The Essentials of Doctoral Education for Advanced Practice Nursing*. As the highest practice degree available in nursing, the DNP provides complex practice, improves patient outcomes, enhances leadership, advances the practice of nursing (AACN, 2006). There are eight essentials for DNP practice outlined by the AACN. While this DNP project can influence all eight practice essentials, there were several main essentials that were met by the project.

Essential I: Scientific Underpinnings for Practice

As a project that evaluated the optimal care of flight nurses, this DNP project met the essentials for scientific underpinnings. This DNP project not only studied the historical association of CF and BO within the nursing community, but then also sought to decrease the levels of CF and BO among the flight nursing population. One of the many issues that was identified was the turnover rate in the air medical community. There is a negative effect upon the care of patients with increased turnover rates. The more turnover that occurs, the more the decrease in the quality of care provided. This DNP project sought to decrease the rate of turnover by decreasing the rates of CF and BO among flight nurses. This may translate to an overall increase in the quality of care for patients that require air medical transport.

This DNP project also evaluated, documented the results, and educated flight nurses on the emotional health of the nurse and recognizing that this behavior interacts with the environment in which the flight nurse practices. CF and BO levels are directly influenced by the flight nurse's interaction within the critical care air transport environment. The flight nursing environment places the flight nurse at an increased risk for the development of CF and BO. Thus, the scientific underpinning of how to evaluate for CF and BO and how to alleviate or improve the emotional condition of the flight nurse is fully developed in this DNP essential.

Essential III: Clinical Scholarship and Analytical Methods for EBP

The AACN considers research and scholarship to be the hallmark of doctoral education (2006). Discovering a phenomenon and analyzing data surrounding the phenomena has been a practice within nursing at all levels. However, the DNP graduate must evaluate the existing literature and implement the best practice (AACN, 2006). In this DNP project, the DNP project manager recognized that flight nurses are at risk for and suffering from CF and BO. This was

evidenced by the turnover rate at one of the largest air medical companies in the United States. After recognizing that CF and BO existed in flight nurses, the DNP project manager began researching methods that could be utilized to decrease the levels of CF and BO in flight nurses.

After researching the possible methods that could be utilized to decrease the levels of CF and BO in flight nurses, the DNP project manager used the literature to design and implement a process that could improve the condition. The project intervention designed and implemented was supported and utilized information technology to not only collect the pre-intervention data, but to also implement the intervention. To implement the educational intervention and to assess the pre- and post-intervention ProQOL assessments, the online platforms of YouTube™ and SurveyMonkey® were utilized in this DNP project. Additionally, this DNP project utilized information technology to evaluate the result data from the pre- and post-intervention assessments.

The project manager also acted as the practice specialist in the creation of the peer-to-peer educational intervention for flight nurses. The project manager thoroughly studied the subjects of CF and BO when deciding on a project for the DNP degree. By fully studying the subjects, the project manager became a specialist on the topics of CF and BO. As a result, this allowed the project manager to develop an educational presentation and video for use in the DNP project. Furthermore, the DNP project manager developed a handout that could be printed by the participant for further use and distribution by the participants. The findings discovered during the literature review were therefore developed into a practice guideline and used to improve practice within the flight nurse environment.

Essential V: Health Care Policy for Advocacy in Health Care

The AACN (2006) DNP Essentials states that nurses engage in processes that address and influence health care needs by advocating for the needs of nursing and patients (2006). The information developed can provide leadership to influence health policy or provide education to others (AACN, 2006). The development of this DNP project and the interventions sought to fully educate others in the field of nursing. The nursing profession has been at risk for CF and BO since the beginning of the profession. However, emphasis was placed on caring for the patients and the nurses were left untreated. This DNP project sought to advocate for the nursing profession by providing the education needed to not only recognize the presence of CF and BO in flight nurses, but also to assist the flight nurse in self-advocacy to prevent and treat their CF and BO. By providing education to other flight nurses, the DNP project essentially advocated for flight nurses' emotional health and well-being.

Conclusion

With a decrease in the mean CF and BO scores, education is a viable option for decreasing levels of CF and BO in flight nurses. Further study and education is needed to further the profession of flight nursing and to prevent negative outcomes for flight nurses. As the only scholarly project focused solely on the field of flight nursing, this project represents the beginning of many possible future research projects focusing on flight nursing. To preserve the future of flight nursing and flight nurses, there must be a focus on the emotional health and well-being of flight nurses. With new interventions and future education on the topics of CF and BO, flight nurses now have additional topics to continue studying and to prepare future practice for flight nurses entering the air medical field.

Table 9

SPSS Code Table

Question	SPSS Name	Nominal	Definition
Sex	SEX	1	Male
		2	Female
Age	AGE	1	18-29
		2	30-39
		3	40-49
		4	50-59
		5	>60
Years of Experience as nurse	EXPN	1	0-5 years
		2	6-10 years
		3	10-15 years
		4	15-20 years
		5	>20 years
Years of Experience as flight nurse	EXPFN	1	0-3 years
		2	4-8 years
		3	9-15 years
		4	16-20 years
		5	>20 years
What type of service do you work for?	SVC	1	Hospital-based service
		2	Community-based service
		3	Other type of service
Highest educational level	ED	1	Diploma
		2	ADN
		3	BSN
		4	MSN/Masters
		5	DNP/Ph.D.
Current employment status as flight nurse	EMP	1	Full-time
		2	Part-time
		3	PRN/As needed
Compassion Fatigue Level Pre-intervention	CFPR		Individual level entered
Burnout Level Pre-intervention	BOPR		Individual level entered
Compassion Satisfaction Level Pre-intervention	CSPR		Individual level entered

Compassion Fatigue Level Post-intervention	CFPO		Individual level entered
Burnout Level Post-intervention	BOPO		Individual level entered
Compassion Satisfaction Level Post-intervention	CSPO		Individual level entered

References

Air Medical Journal. (2020). General information. *Air Medical Journal,* 39(5), 309.

Air Medical Transport Conference (AMTC). (2019). *Keynote.* https://events.thepulsenetwork.com/GcmMaintenance/aams/online%20agenda/30000004/index.htm

Air & Surface Transport Nurse Association (ASTNA). (2014). *Qualifications, orientation, competencies, and continuing education for transport nurses.* https://cdn.ymaws.com/www.astna.org/resource/collection/4392B20B-D0DB-4E76-959C6989214920E9/Qualifications,_Orientation,_Competencies,_and_Continuing_Education_for_Transport_Nurses.pdf

American Association of Colleges of Nursing (AACN). (2006). *The essentials of doctoral education for advanced nursing practice.* https://www.aacnnursing.org/Portals/42/Publications/DNPEssentials.pdf

Barmawi, M.A., Subih, M., Salameh, O., Sayyah, N.S., Shoqirat, N., & Jebbeh, R. A. (2019). Coping strategies as moderating factors to compassion fatigue among critical care nurses. *Brain and Behavior, 9*. Doi: 10.1002/brb3.1264

Board Certification of Emergency Nursing (BCEN). (2020). *CFRN eligibility*. https://bcen.org/cfrn/eligibility/

Bourgault, A. (2019). Take control of your work environment and personal well-being. *Critical Care Nurse, 39*(6), 10-13. Doi: 10.4037/ccn2019408

Centre for Evidence-based Medicine (CEBM). (2020). Critical appraisal tools. *The University of Oxford.* https://www.cebm.net/2014/06/critical-appraisal/

Cocker, F., & Joss, N. (2016). Compassion fatigue among healthcare emergency and community

service workers: A systematic review. *International Journal of Environmental Research and Public Health, 13*(618). Doi: 10.3390/ijerph13060618

Compassion Fatigue Awareness Project [CFAP]. (2017). *About our founder*. https://compassionfatigue.org/pages/about.html

Corcoran, C.M. (2020). Use of psychological first aide for nurses. *Nursing Economic$, 38*(1), 26-32.

Dikmen, Y., Aydin, Y., Basaran, H., Filiz, N.Y., Denat, Y., & Arslan, G.G. (2016). Prevalence of compassion fatigue in emergency and intensive care nurses in Turkey. *Oxidation Communications, 39*(4-I), 3190-3198.

Donald, G., Wilson, I., McCarthy, J., Hall, I., Crossley, B., Adshead, P., Shaw, V., Dunne, R., & Dwyer, T. (2019). Experiences of nurses and other health workers participating in a reflective course on compassion-based care. *British Journal of Nursing, 28*(15), 1020-1025. Doi: 10.12968/bjon.2019.28.15.1020

Federal Aviation Administration (FAA). (2014). *Fact sheet: FAA initiatives to improve helicopter air ambulance safety.* https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=15794

Flarity, K., Gentry, J.E., Mesnikoff, N. (2013). The effectiveness of an educational program on preventing and treating compassion fatigue in emergency nurses. *Advanced Emergency Nursing Journal, 35*(3), 247-258. Doi: 10.1097/tme0b013e31829b726f

Foli, K.J., & Thompson, J.R. (2019). Trauma and becoming a nurse. *Reflections on Nursing Leadership.* https://www.reflectionsonnursingleadership.org/features/more-features/trauma-and-becoming-a-nurse

Grand View Research. (2017, March). Air ambulance services market size, share & trends

analysis report by types (rotary-wing, fixed-wing), by service model (community based, hospital based), by region, and segment forecasts, 2018-2015. *Market Research Report. https://www.grandviewresearch.com/industry-analysis/air-ambulance-services-market*

Henry, B.J. (2014). Nursing burnout interventions: What is being done? *Clinical Journal of Oncology Nursing, 18*(2), 211-214. Doi: 10.1188/14.CJON.211-214

Hinderer, K.A., VonRueden, K.T., Friedmann, E., McQuillan, K.A., Gilmore, R., Kramer, B., & Murray, M. (2014). Burnout, compassion fatigue, compassion satisfaction, and secondary traumatic stress in trauma nurses. *Journal of Trauma Nursing, 21*(4), 160-169. Doi: 10.1097/JTN.0000000000000055

Houck, D. (2014). Helping nurses cope with grief and compassion fatigue: An educational intervention. *Clinical Journal of Oncology Nursing, 18*(4), 454-458. Doi: 10.1188/14.CJON.454-458

Howard, H., & Navega, N. (2018). Pivotal events: "I'm not a normal person anymore" – Understanding the impact of stress among helping professionals. *Best Practice in Mental Health, 14*(2), 32-47.

Hunsaker, S., Chen, H., Maughan, D., & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship, 47*(2), 186-194. Doi: 10.1111/jnu.12122

IBM. (2020). *IBM SPSS statistics pricing. https://www.g2.com/products/ibm-spss-statistics/pricing*

Jarrad, R., Hammad, S., Shawashi, T., & Mahmoud, N. (2018). Compassion fatigue and

substance use among nurses. *Annals of General Psychiatry, 17*(13). Doi: 10.1186/s12991-018-0183-5

Kelly, L.A., & Lefton, C. (2015). Effect of meaningful recognition on critical care nurses' compassion fatigue. *American Journal of Critical Care, 26*(6), 438-444. Doi: 10.4037/ajcc2017471

Kelly, L., Runge, J., & Spencer, C. (2015). Predictors of compassion fatigue and compassion satisfaction in acute care nurses. *Journal of Nursing Scholarship, 47*(6), 522-528. Doi: 10.1111/jnu.12162

Langley, G.J., Moen, R.D., Nolan, K.M., Nolan, T.W., Norman, C.L., & Provost, L.P. (2009). *The improvement guide: A practical approach to enhancing organization performance* (2nd ed.). Jossey-Bass.

Lobo, V.M., Ploeg, J., Fisher, A., Peachey, G., & Akhtar-Danesh, N. (2018). Critical care nurses' reasons for working or not working overtime. *Critical Care Nurse, 38*(6), 47-57. Doi: 10.4037/ccn2018616

Mateo, M.A., & Foreman, M.D. (2014). *Research for advanced practice nurses: From evidence to practice.* Springer Publishing Company.

Mason, V.M., Leslie, G., Clark, K., Lyons, P., Walke, E., Butler, C., & Griffin, M. (2014). Compassion fatigue, moral distress, and work engagement in surgical intensive care unit trauma nurses: A pilot study. *Dimensions of Critical Care Nursing, 33*(4), 215-225. Doi: 10.1097/DCC.0000000000000056

Mattioli, D., Walters, L., & Cannon, E.J. (2018). Focusing on the caregiver: Compassion fatigue awareness and understanding. *MedSurg Nursing, 27*(5), 323-328.

Melnyk, B.M., Finout-Overholt, E., Stillwell, S.B., & Williamson, K.M. (2010). Evidence-based

practice: Step by step: The seven steps of evidence-based practice. *The American Journal of Nursing, 110*(1), 51-53. Doi: 10.1097/01.NAJ.0000366056.06605.d2

Monroe, M., Morse, E., & Price, J.M. (2020). The relationship between critical care work environment and professional quality of life. *American Journal of Critical Care, 29*(2), 145-149. Doi: 10.4037/ajcc2020406

Moran, K., Burson, R., & Conrad, D. (2014). *The doctor of nursing practice scholarly project: A framework for success.* Jones & Bartlett Learning.

National Health Service (NHS). (n.d.). *Plan, Do, Study, Act (PDSA) cycles and the model for improvement.* https://improvement.nhs.uk/documents/2142/plan-do-study-act.pdf.

Nolte, A.G., Downing, C., Temane, A., & Hastings-Tolsma, M. (2017). Compassion fatigue in nurses: A metasynthesis. *Journal of Clinical Nursing, 26,* 4364-4378. Doi: 10.1111/jocn.13766

Nursing Solutions, Inc. (NSI). (2020). *2020 NSI national health care retention & RN staffing report.*https://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf

Oxford Centre for Evidence-Based Medicine [OCEBM]. (2011). *The Oxford 2011 level of evidence.* http://www.cebm.net/index.aspx?o=0653

ProQOL.com (2019). *Can I use the ProQOL and other FAQ.* https://proqol.org/FAQ.html

Reavy, K., & Tavernier, S.S. (2008). Nurses reclaiming ownership of their practice: Implementation of an evidence-based practice model and process. *The Journal of Continuing Education in Nursing, 39*(4), 166-172. Doi: 10.3928/00220124-20080401-07

Reed, J.E., & Card, A.J. (2016). The problem with Plan-Do-Study-Act cycles. *British Medical Journal, 25*, 147-152. Doi: 10.1136/bmjqs-2015-005076

Riva, J.J., Malik, K.M., Burnie, S.J., Endicott, A.R., Busse, J.W. (2012). What is your research question? An introduction to the PICOT format for clinicians. *Journal of the Canadian Chiropractic Association, 56*(3), 167-171.

Ruiz-Fernandez, M.D., Ortega-Galan, A.M., Fernandez-Sola, C., Hernandez-Padilla, J.M., Granero-Molina, J., & Ramos-Pichardo, J.D. (2020). Occupational factors associated with health-related quality of life in nursing professionals: A multi-centre study. *International Journal of Environmental Research and Public Health, 17*(982). Doi: 10.3390/ijerph17030982

Rushton, C.H., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burnout and resilience among nurses practicing in high-intensity settings. *American Journal of Critical Care, 24*(5), 412-421. Doi: 10.4037/ajcc2015291

Sacco, T.L., Ciurzynski, S.M., Harvey, M.E., & Ingersoll, G.L. (2015). Compassion satisfaction and compassion fatigue among critical care nurses. *Critical Care Nurse, 35*(4), 32-43. Doi: 10.4037/ccn2015392

Sansbury, B.S., Graves, K., & Scott, W. (2015). Managing traumatic stress responses among clinicians: Individual and organizational tools for self-care. *Trauma, 17*(2), 114-122. Doi: 10.1177/1460408614551978

Stamm, B.H. (2010). *The concise ProQOL manual* (2nd ed.). ProQOL.org.

SurveyMonkey. (2020). *Discounts for students and educators.* https://www.surveymonkey.com/pricing/individual/details/?e=edu_faq&ut_source=pricing-individual-details

SurveyMonkey. (2020A). *Data Security*. https://www.surveymonkey.com/mp/data-security-and-compliance/

TEDx Talks. (2017, February 7). *How to manage compassion fatigue in caregiving | Patricia Smith | TEDxSanJuanIsland* [video]. https://www.youtube.com/watch?v=7keppA8XRas&t=67s

TED. (2020). *TED talks usage policy.* https://www.ted.com/about/our-organization/our-policies-terms/ted-talks-usage-policy

Tramutola, K. (2015). Suicide among nurses. *New Jersey Nurse, 45*(4), 1.

van Mol, M.M., Kompanje, E.J., Benoit, D.D., Bakker, J., & Nijkamp, M.D. (2015). The prevalence of compassion fatigue and burnout among healthcare professionals in intensive care units: A systematic review. *PLoS ONE, 10*(8). Doi: 10.1371/journal.pone.0136955

Wagner, A.L., Watson, J., Cara, C. (2020). *Core concepts of Jean Watson's theory of human caring/unity caring science*. Watsoncaringscience.org

Watson, J. (2002). Intentionality and caring-healing consciousness: A practice of transpersonal nursing. *Holistic Nursing Practice, 16*(4), 12-19.

Watson, J. (2008). *Nursing: The philosophy and science of caring.* University Press of Colorado.

Wei, H., Kifner, H., Dawes, M.E., Wei, T.L., & Boyd, J.M. (2020). Self-care strategies to combat burnout among pediatric critical care nurses and physicians. *Critical Care Nurse, 40*(2), 44-54. Doi: 10.4037/ccn2020621

Wentzel, D., & Brysiewicz, P. (2017). Integrative review of facility interventions to manage compassion fatigue in oncology nurses. *Oncology Nursing Forum, 44*(3), E124-140. Doi: 10.1188/17.ONF.E124-E140

Wilson, A., Bellolio, F., Jeffery, M.M., Lohse, C.M., & Sunga, K.L. (2019). Shift-based

emotional stress reactions in emergency nurses after traumatizing events. *Journal of Emergency Nursing, 45*(6), 634-643. Doi: 10.1016/j.jen.2019.08.002

Yang, Y.H., & Kim, J.K. (2016). Factors influencing turnover intention in clinical nurses: Compassion fatigue, coping, social support, and job satisfaction. *Korean Academy of Nursing Administration, 22*(5), 562-569. Doi: 10.11111/jkana.2016.22.5.562

Zhang, Y., Zhang, C., Han, X., Li, W., & Wang, Y. (2017). Determinants of compassion satisfaction, compassion fatigue and burn out in nursing: A correlative meta-analysis. *Medicine, 97*(26). Doi: 10.1097/MD.00000000000011086

Appendix A

First Author (Year)	Type of Study	Setting	Design/Method	Major Variables	Results	OCEBM Level
Cocker, F., et al., (2016). *International Journal of Environmental Research and Public Health, 23* (618).	Systematic review	Emergency and community health	Search designed with four groups of terms Grp 1 – Compassion fatigue (CF), related concepts, and variants or derivatives such as secondary traumatic stress Grp 2 – At risk occupations such as frontline health, emergency and community service workers Grp 3 – Terms related to study design (interventions, training or randomized control groups) Grp 4 – Employment type such as employees, workers, and professionals	Variables different for each study reviewed in the systematic review	Total number of articles reviewed: 216 198 articles were excluded due to not applying to specific occupation 13 studies were deemed acceptable and applicable for systematic review 10 studies utilized the ProQOL assessment 61.5% of studies showed improvement of compassion satisfaction (CS) post intervention	1

					Interventions successful in the workplace to reduce CF	
Nolte, A., et al. (2017). *Jounral of Clinical Nursing, 26,* 4364-4378	Meta-synthesis	Nurses of any specialty	Sample had to meet three criteria 1. Qualitative study 2. Focus is CF 3. Population is nurses	Mostly ProQOL assessment scores for CF and CS Survey and personal interview	Most common sited causes of CF include conflict with management, dealing with family, personal/nursing values, work overload, do not know where to seek assistance	1
Al Barmawi, M., et al. (2018). *Brain and Behavior, 9.*	Quantitative Observational	Jordanian Nurses Four Jordanian hospitals	Cross-sectional design of 228 nurses Nurses from emergency department (ED) and critical care units (CCU) Nurses completed demographic information and then completed ProQOL assessment and coping strategies indicator (CSI) scale	CF, CS, and burnout scores CSI Score	CF and burnout (BO) scores were low to average levels from past research CF and CSI correlate in many ways, but further research needed Females had better CS than	2

					male counterparts	
Sacco, T., et al. (2015). *Critical Care Nurse, 35*(4), 32-44.	Quantitative Observational	Critical care nurses (Adult, pediatric, and neonatal)	Cross-sectional design Demographic page completed and ProQOL assessment Total of 221 nurses participated	CF, CS, and burnout scores Department Sex Age	Mean CF and CS was average throughout all units Nurses with no change in management in previous year had lower CS scores Single acuity units had significantly higher CS Relationship between higher level of education and CS was significant Nurses are age 50 had higher CS Nurses in 20-29 years of age had significantly	2

					higher level of CF	
Zhang, Y., et al. (2018). *Wolters Kluwer Health, 97*(26).	Systematic Review Meta-analysis Cross-sectional studies	Generalizes nursing	Meta-analysis Correlation of coefficients from individual studies converted to z-scores and back-transformed into r Working nurses, study must utilize ProQOL assessment Excludes any study with PTSD mentioned/included	Type of nursing Age Sex	Eleven studies met criteria Total of 4054 respondents Strong positive association between CF and BO Higher hours worked and higher nurse-to-patient ratios increased risk of CF CS had moderate inverse correlation to BO Physical and mental patient care tasks, and logistical and managerial issues were associated with	1

					increased rates of CF	
Kelly, L., et al., (2017). *American Journal of Critical Care, 26*(6), 438-444.	Quantitative Descriptive online survey	Intensive care units (ICU) 24 different hospitals 1,136 ICU nurses	Site coordinators at each hospital facility 3-part survey administered via email 1. Demographics 2. ProQOL assessment 3. Single-item predictor questions BO, CF, and CS scores were evaluated Linear forward stepwise regression analysis conducted on ProQOL outcomes for predictors of demographics, meaningful recognition, and single-item questions	Hospital/units with meaningful recognition program in place versus hospital without a meaningful recognition program DAISY Award used as the standardized recognition program	Hospitals with a meaningful recognition program experienced lower rates of CF and BO In nurses with higher CS, CF was lower Older nurses were more likely to have higher CS scores Nurses that had received a DAISY award were more likely to have higher CS scores	2
Hunsaker, S., et al. (2014). *Journal of Nursing Scholarship, 47*(2), 186-194.	Descriptive Predictive	Random selection of 1,000 emergency department nurses in the United States	1,000 random emergency department nurses received a packet in the mail Included demographics page and ProQOL assessment	Demographics Work-related characteristics	Low to average levels of CF and BO Higher levels of CS	2

			Assessment of CF, CS, and BO scores from ProQOL Multiple regressions with variable to predict prevalence		Low level manager support predictor of higher level of BO and CF Higher level of manager of support predictor of increased CS	
Ruiz-Fernandez, M., et al. (2020). *International Journal of Environmental Research and Public Health, 17.*	Cross-sectional Descriptive	Primary and hospital care nurses in the Andalusian Public health System	ProQOL assessment utilized to determine CF, CS, and BO scores Health-related Quality of Life (HRQoL) health questionnaire Required minimum sample 991 participants Active nurses with direct patient care only	Demographics HRQoL score CF, CS, and BO scores	Total of 1,521 nurses agreed to participate HRQoL scores were lower in women Higher levels of CF or BO were associated with lower HRQoL scores Higher levels of CS resulted in higher HRQoL scores – weak association Weakness – mostly older	2

					nurses with greater than 20 years experience participated, but was a representative sample of the entire health system	
Kelly, L., et al. (2015). *Journal of Nursing Scholarship, 47*(6), 522-528.	Cross-sectional Electronic	Direct care registered nurses in a quaternary care, teaching hospital in Southwest United States	Electronic survey of ProQOL assessment Total number of participants: 491 Evaluated the CF, CS, and BO scores	Demographics Specialty Job satisfaction Intent to leave	Predictors of BO were lack of meaningful recognition, especially in "millennial-aged" nurses Receiving higher meaningful recognition, being older, and higher job satisfaction was a predictor of higher CS No significant difference between specialties	2

					May explain lack of retention	
Van Mol, M., et al. (2015). *PLoS ONE, 10*(8).	Systematic review	ICU healthcare professionals	Utilized Embase, Medline OVidSP, Cinahl, Web-of-science, PsychINFO, PubMed publisher, Cochrane and GoogleScholar for articles published between 1992 and June, 2014 Must report prevalence of BO, CF, secondary traumatic stress (STS), and vicarious trauma, as well as related intervention studies Forty of 1,623 identified studies met the criteria for inclusion Total number of participants: 14,770	Demographics	Reported prevalence of burnout in ICU varied from 0% to 70.1% Intervention strategies in more recent research may be cause of vast range Weakness: Wide range of studies with varied sample sizes, specialties, and countries. Results not divided by these variables	1
Lobo, V., et al. (2018). *Critical Care Nurse, 38*(6).	Qualitative	11 different critical care units in Ontario	Semistructured interviews with critical care nurses Thorne's interpretive descriptions methodology	Age Sex	Reported tiredness as the number one reason for not working overtime to cover open	2

			Reasons for not working overtime: 1. Tired of being at work (50%) 2. Established plans outside of work		nursing positions. Weakness: Does not specifically address whether the tiredness is a result of compassion fatigue or burnout. Only 28 nurses agreed to participate.	
Jarrad, R., et al. (2018). *Annals of General Psychiatry, 17*(13).	Descriptive ProQOL Assessment	All nurses	Total number of participants: 282. Self-report of use and frequency of use of substances such as, cigarettes, alcohol, tobacco, analgesics, coffee, amphetamines, anti-anxiety medications, anti-depressants, sleeping pills, and power drinks.	Demographics Substances CF, CS, and BO scores on ProQOL assessment	Low resilience in nurses resulted in maladaptive behaviors such as substance use. Significant difference in CF and BO scores in nurses reporting frequent substance use.	2
Mason, V.M., et al., (2014). *Dimensions of Critical Care*	Mixed design	SICU – Trauma Nurses	Total number of participants: 34 ProQOL assessment completed	Demographics CF, CS, and BO scores on ProQOL assessment	All nurses scored high on CS	3

Nursing, 33(4), 215-225.			Qualitative portion through questionnaire about participant work experience examples Pilot study	Work and well-being survey results (UWES) Shift worked Moral situations Scale	Day shift scored higher on CF and BO than night shift Staffing, management, and supplies were top three contributing issues	
Rushton, C.H., et al. (2015). *American Journal of Critical Care, 25*(5), 412-420.	Cross-sectional Quantitative	4 Hospital (in the same healthcare system) 6 High-stress units (Ped/Neo, Oncology, adult critical care)	Total number of participants: 114 Six survey instruments utilized: Maslach Burnout Inventory – Human Services, moral distress scale, perceived stress scale, resilience scale, meaning scale, and State Hope Scale.	Scores of the six survey instruments Demographics	Moral distress was predictor of all 3 aspects of burnout High-acuity departments at higher rate of BO Emotional exhaustion greatest predictor of burnout validity	2
Henry, B.J. (2014). *Clinical Journal of Oncology Nursing, 18*(2), 211-214.	Systematic Review	General Nurses	Ten journals related to burnout interventions	Demographics BO interventions	Employee Assistance Program (EAP) most common intervention mentioned	2

					Decreased CF scores noted after session on CF resilience Multiple educational programs with different focuses all resulted in decrease CF levels	
Wentzel, D., et al. (2017). *Oncology Nursing Forum,44*(3), E124-140.	Systematic Review	Oncology Nurses	31 journal articles included Effectiveness and feasibility of CF management	Qualitative studies included CF and BO assessment scores Demographics Turnover rate	All studies showed a decrease in CF and BO levels with interventions performed and re-evaluated Staff turnover rates decreased by half in one study in post-evaluation Improvement of general health of nurses noted	1
Corcoran, C.M. (2020). *Nursing*	Literature Review	Disaster Response Nurses	8 full-text journals included	Psychological First Aid (PFA) responses	Lack of research on PFA in nurses exists	1

Economic$, 38(1), 26-32.			4 gray literature articles included	CF score	PFA curriculum and education is needed and shows decrease in CF and PTSD in other disaster response personnel	
Yang, H.H., et al. (2016). *Journal of the Korean Academy of Nursing Administration, 22*(5), 562-569.	Cross-sectional Correlational	Clinical nurses	Total number of participants 283 Turnover intention	CF Score Demographics Job satisfaction score Turnover intention	Med-high turnover intention affect by job satisfaction and marital status Job satisfaction affected by workload, support, and CF score CF affected by trauma exposures, negatively affected by emotionally-affected coping skills	2
Hinderer, K.A., et al. (2014). *Journal of*	Cross-sectional Descriptive	Trauma Nurses	Total number of participants: 128	CF, BO, and CS score	Relationship between CF, BO, and CS and	2

Trauma Nursing, 21(4), 160-169.			Dutton and Rubinstein's Theory of Secondary Traumatic Stress Model utilized ProQOL Assessment Penn Inventory for PTSD Demographic/Behavioral Instrument	Penn Inventory Scores Demographics	secondary traumatic stress BO was highest percentage of negative scores Results compare to ED, ICU, and oncology nurse results BO and CF had the strongest relationship	
Donald, G., et al. (2019). *British Journal of Nursing, 28*(15), 1020-1025.	Qualitative Semistructured	Nurses, nurse aide, social worker, and occupational therapist	Total number of participants: 12 Participants attended reflective course Interview with researcher in private Thematic analysis performed	Thematic phrases Demographics Job Position	Team dynamics was greatest improvement post class Decreased absences post education Increased compliance with mandatory education Increased number of incidence reporting	3

Howard, H., et al. (2018). *Best Practice in Mental Health, 14*(2), 32-47.	Mixed methods	"Helping Professionals"	Recruited from professionals that self-identified as being exposed to trauma at work Utilized ProQOL Assessment Semi-open interview Number of participants: 16	CF, CS, and BO scores on ProQOL Thematic phrases Demographics	Organizational structure greatly affected level of CF Suggests education as mode for preventing and treating CF Helping professions at greater risk for CF and BO	3
Monroe, M., et al. (2020). *American Journal of Critical Care, 29*(2), 145-150.	Exploratory Cross-sectional	ICU Nurses	ProQOL assessment AACN Healthy Work Environment Assessment Tool Projected sample size was 219. Only 45% participated	CF, CS, & Bo Scores on ProQOL HWEAT scores Demographics	ICU nurses have a high incidence of secondary traumatic stress Nurse involvement in decision making improved CF, BO and HWEAT scores Support from management was important Poor staffing correlates with	2

					increased rates of CF	
Wilson, A., et al. (2019). *Journal of Emergency Nursing, 45*(6), 634-643.	Cross-sectional Quantitative	Emergency department nurses	Emotional Stress Reaction Questionnaire (ESRQ) tool complete pre and post shift over six-month period Total number of participants: 94	ESRQ scores Demographics	Exposure to a traumatizing event led to increased negative emotional stresses Even a single traumatizing event decreased the ESRQ score	2
Dikmen, Y., et al. (2016). *Oxidation Communications, 39*(4-I), 3190-3198.	Descriptive Cross-sectional	Emergency and ICU nurses in Turkey	Unknown tool utilized Total participants: 128 ICU & ED nurses – 111 were ICU nurses Simple analysis by demographics	CF scores Demographics	Weakness: Unknown what tool was used. Score leads to ProQOL, but not specifically mentioned. Scores were classified as high or low, instead of high, medium, and low. Results showed 60.1% had high level of compassion fatigue.	2

Wei et al. (2020). *Critical Care Nurse, 40*(2), 44-54.	Qualitative Descriptive	Pediatric Critical Care Nurses & Physicians	Individual face-to-face interviews conducted with a demographic sheet completed by participant Phenomenological overtones utilized Total number of participants: 20 (65% nurse and 35% physician)	Demographics Phenomenological terms/phrases	Weakness: Convenience sampling, small participant group Top strategy was finding meaning in work (90% of participants) Second most used was a support system (75% of participants)	3
Flarity et al. (2013). *Advanced Emergency Nursing Journal, 35*(3), 247-258.	Quantitative	Emergency nurses	Total number of participants: 28 Utilized ProQOL assessment pre- and post-intervention	Demographics CF, CS, & BO levels pre- and post-intervention	Weakness: Single hospital emergency department, convenience sampling 10% increase in CS 34% decrease in BO 19% decrease in CF(STS)	2

Appendix B

From: **Jean** jeanwatson@comcast.net
Subject: Re: Permission to Use
Date: May 11, 2020 at 3:34 PM
To: bryondenton@gmail.com
Cc: julie watson Julie@watsoncaringscience.org

Byron, thanks for your interest in my theory and good wishes for your reseach. I may suggest you reframe the focus from negative compassion fatigue to compassion renewal…new options to change the energy focus… especially if using caring theory and 10 Caritas Processes as way to repattern usual negative mindsets.

Happy to give permission to use Watson Theory of human Caring - just please make sure you give source citation for it.

All good wishes of success.

In loving kindness, Jean

Jean Watson, PhD,RN, AHN-BC, FAAN, LL (AAN)
Founder Watson Caring Science Institute
Distinguished Professor Nursing/Dean Emerita University of Colorado Denver College of Nursing
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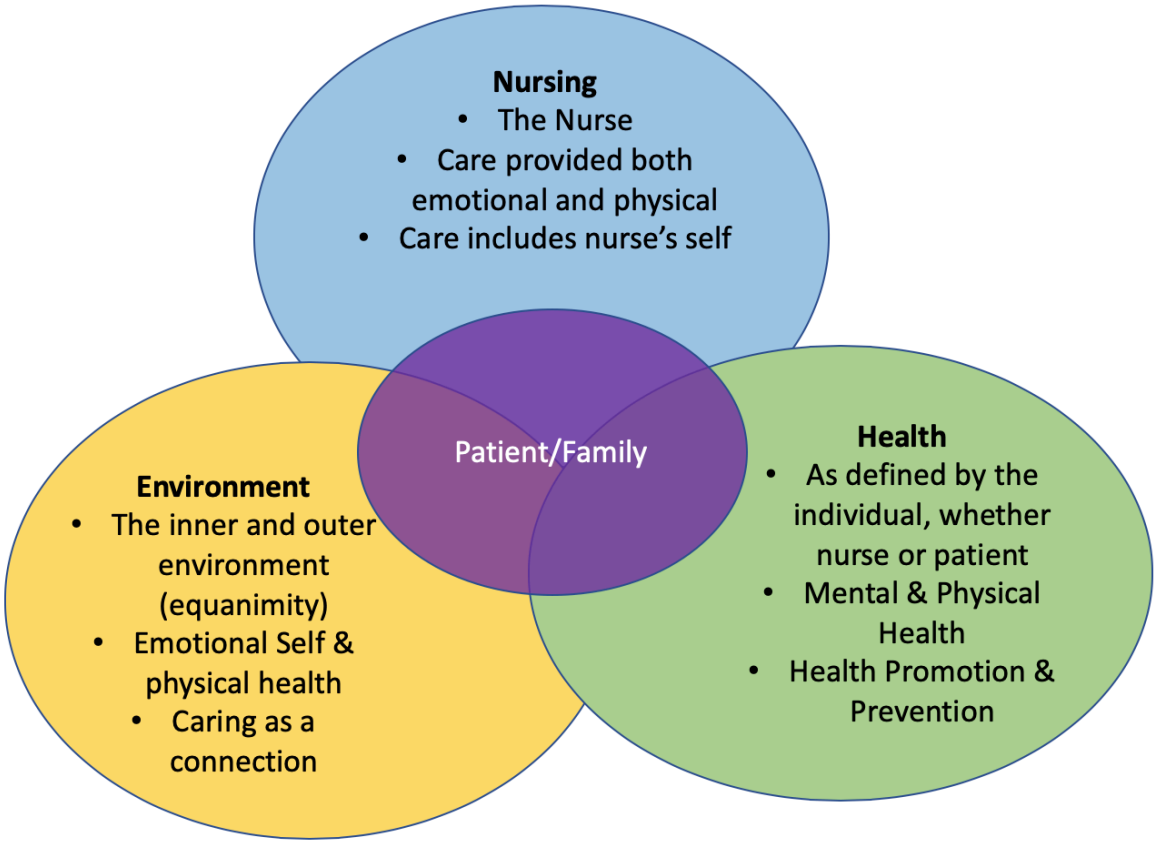
Appendix C



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Appendix E

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Bryon Denton (ID: 8708601)
- **Institution Affiliation:** Aspen University (ID: 3218)
- **Institution Email:** bryondenton@gmail.com
- **Institution Unit:** Nursing
- **Phone:** 2177146640

- **Curriculum Group:** Responsible Conduct of Research (RCR)
- **Course Learner Group:** Social, Behavioral, and Education Sciences (RCR)
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 34493112
- **Completion Date:** 17-Apr-2020
- **Expiration Date:** 17-Apr-2023
- **Minimum Passing:** 80
- **Reported Score*:** 92

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Authorship (RCR-Basic) (ID: 16597)	16-Apr-2020	5/5 (100%)
Collaborative Research (RCR-Basic) (ID: 16598)	16-Apr-2020	5/5 (100%)
Conflicts of Interest (RCR-Basic) (ID: 16599)	17-Apr-2020	4/5 (80%)
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Research Misconduct (RCR-Basic) (ID: 16604)	17-Apr-2020	5/5 (100%)
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Research Involving Human Subjects (RCR-Basic) (ID: 13566)	17-Apr-2020	4/5 (80%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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Appendix F

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Bryon Denton (ID: 8708601)
- **Institution Affiliation:** Aspen University (ID: 3218)
- **Institution Email:** bryondenton@gmail.com
- **Institution Unit:** Nursing
- **Phone:** 2177146640

- **Curriculum Group:** Social Behavioral Educational Researchers
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 34493111
- **Completion Date:** 16-Apr-2020
- **Expiration Date:** 16-Apr-2023
- **Minimum Passing:** 80
- **Reported Score*:** 85

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and Its Principles (ID: 1127)	08-Dec-2019	3/3 (100%)
International Studies (ID: 971)	22-Dec-2019	3/3 (100%)
Cultural Competence in Research (ID: 15166)	22-Dec-2019	5/5 (100%)
Students in Research (ID: 1321)	15-Apr-2020	3/5 (60%)
Defining Research with Human Subjects - SBE (ID: 491)	15-Apr-2020	5/5 (100%)
Assessing Risk - SBE (ID: 503)	15-Apr-2020	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	15-Apr-2020	4/5 (80%)
The Federal Regulations - SBE (ID: 502)	15-Apr-2020	3/5 (60%)
Informed Consent - SBE (ID: 504)	15-Apr-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	15-Apr-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	15-Apr-2020	3/5 (60%)
Research with Prisoners - SBE (ID: 506)	15-Apr-2020	4/5 (80%)
Research with Children - SBE (ID: 507)	15-Apr-2020	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	15-Apr-2020	5/5 (100%)
International Research - SBE (ID: 509)	15-Apr-2020	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	15-Apr-2020	4/4 (100%)
Hot Topics (ID: 487)	15-Apr-2020	No Quiz
Conflicts of Interest in Human Subjects Research (ID: 17464)	15-Apr-2020	4/5 (80%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	16-Apr-2020	3/5 (60%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?kfa519d7a-8bcc-4c2f-a0cf-7c34f68b3ced-34493111

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

Appendix G

Effect of Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

1. What is your sex?

- ○ Male
- ○ Female

2. What is your age?

- ○ 18-29 years old
- ○ 30-39 years old
- ○ 40-49 years old
- ○ 50-59 years old
- ○ >60 years old

3. How many years of experience do you have as a nurse?

- ○ 0-5 years
- ○ 6-10 years
- ○ 10-15 years
- ○ 15-20 years
- ○ >20 years

4. How many years of experience do you have as a flight nurse?

- ○ 0-3 years
- ○ 4-8 years
- ○ 9-15 years
- ○ 16-20 years
- ○ >20 years

5. What business model best describes your employer?

- ○ Hospital-based program
- ○ Community-based program
- ○ Other (please specify)

6. What is the highest level of education you have completed?

- ○ Diploma
- ○ Associate Degree (Nursing)
- ○ Bachelor of Science in Nursing/Other Bachelors
- ○ Master of Science in Nursing/Other Masters
- ○ Doctorate of Nursing Practice/Ph.D.

7. What is your current employment status as a flight nurse?

- ○ Full-time
- ○ Part-time
- ○ PRN/As needed
- ○ Other (please specify)

Appendix H

IRB Review Form
DNP Project

IRB Case Number: 1BD9-08F1

Name of Candidate: Bryon Denton

DNP Project Title: Effect of a Peer-to-Peer Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

Date of Application: 1st-September-2020

Application Type:

X_Exempt Review
__Expedited Review
__Full Review

Application Status:

_X_ Approved
__ Not Approved
___Approved with Amendment

The student/researcher understands and agrees to maintain the confidentiality of any entity agreeing to assist with providing data; to obtain informed consent from any human participants in the study; and to retain and safeguard written consents and the data for a period of five years from all entities, presenting copies to Aspen University, to the participants, and to authoritative bodies when appropriate.

Dr. Eva Ballard. IRB Chair _____ __08th of September in 2020_____

IRB Representative Name and Title Date

All questions or concerns should be directed to IRB@aspen.edu. This includes immediately reporting any unexpected adverse events or alterations in risk levels for participants within 48 hours of occurrence of such events.

Dr. Eva Ballard
IRB Chairperson
Aspen University
1660 South Albion Street, Suite 525
Denver, CO 80222

Appendix I

Project Timeline

Step One: Develop question to be answered for the project

Step Two: Create PICOT

Step Three: Begin review of literature on compassion fatigue, burnout, and compassion satisfaction and collect all available data

Step Four: Discuss project ideas with industry professionals

Step Five: Create project question to be answered

Step Six: Create ProQOL assessment and demographics tools in SurveyMonkey®

Step Seven: Complete and submit Aspen University IRB proposal for expedited review

Step Eight: Receive IRB approval

Step Nine: Advertise for participation on Facebook utilizing the Facebook group page *Flight Paramedics & Nurses* for one week

Step Ten: Participants will complete a pre-intervention ProQOL assessment and demographic information on SurveyMonkey ®

Step Eleven: Following one week of project being open on SurveyMonkey®, end open period

Step Twelve: Thirty days following the close of the survey, issue command for SurveyMonkey® to send a reminder email for the participants to complete the post-intervention SurveyMonkey® assessment

Step Thirteen: Participant will again go to SurveyMonkey® to complete the post-intervention ProQOL assessment

Step Fourteen: Following one-week, close SurveyMonkey® survey

Step Fifteen: Calculate the pre- and post-intervention ProQOL assessment scores for compassion fatigue, compassion satisfaction, and burnout

Step Sixteen: Input the data into IBM SPSS for evaluation

Step Seventeen: Evaluate, interpret and report data

Appendix J

Appendix B

Approval of the Project

Doctoral Student: Bryon Denton

The Advisory DNP Committee of the above named Doctoral Student has met and reviewed the DNP entitled:

[TITLE] Effect of an Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

The committee has determined that the Project:

1. Makes a significant contribution to the field of knowledge;

2. Demonstrates the Student's ability to perform independent research;

3. Contains material worthy of publication in a form appropriate to the discipline.

We recommend acceptance of this Project. It contains all appropriate content.

Signature of the Committee Members

Faculty Mentor name: Vivienne Pierce McDaniel Signature: Vivienne Pierce McDaniel

Faculty Reviewer name: Sherri Carter DNP RN Signature: Sherri Carter DNP RN

Independent Reviewer name: Jennifer McSorley Signature: Jennifer McSorley, DNP

Approval

Program Director, Graduate Nursing Programs 8/11/2020

Program Representative name and Signature Date

Completed forms and any attachments should be submitted to:

Emailed to: dnpcoordinator@aspen.edu

Appendix K

Appendix A

Approval of the DNP Proposal

Doctoral Student: Bryon Denton

The DNP Committee of the above named Doctoral Student has met and reviewed the DNP Proposal entitled:

[TITLE] Effect of a Peer-to-Peer Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

The committee has determined that the proposed DNP is likely to:

1. Make a significant contribution to the field of knowledge;
2. Demonstrate the student's ability to perform independent research;
3. Contain material worthy of publication in a form appropriate to the discipline.

We recommend acceptance of this proposal. It contains all appropriate content and forms.

Committee Members

Faculty Mentor: Dr. Vivienne McDaniel Vivienne Pierce McDaniel

Faculty Reviewer: Dr. Sherri Carter Sherri Carter DNP RN

Independent Reviewer: Dr. Jennifer McSorley Jennifer McSorley

Approval

Randall S. Mangrum, DNP, RN 8/31/2020

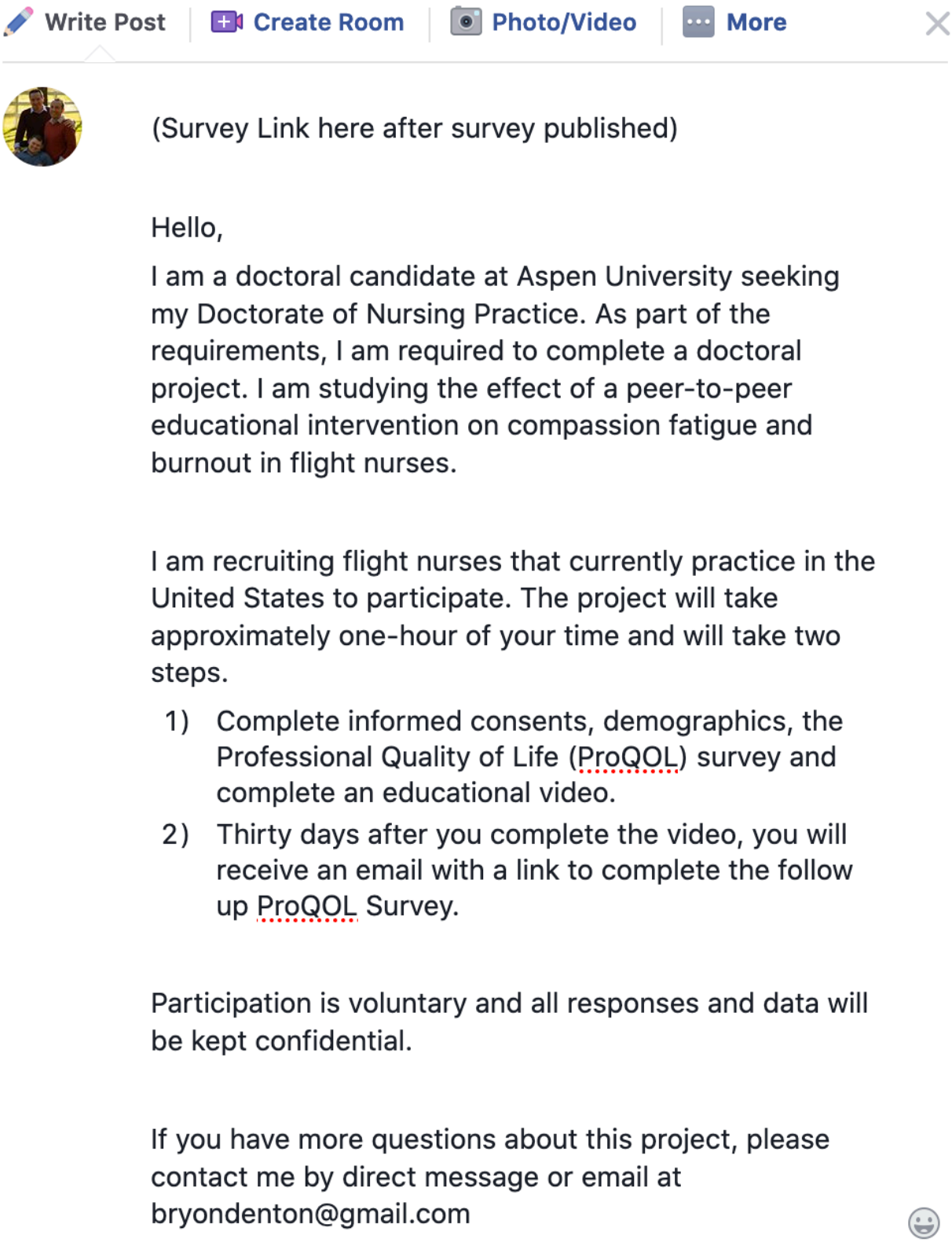
Program Representative and Signature Date

Completed forms and attachments should be submitted to:

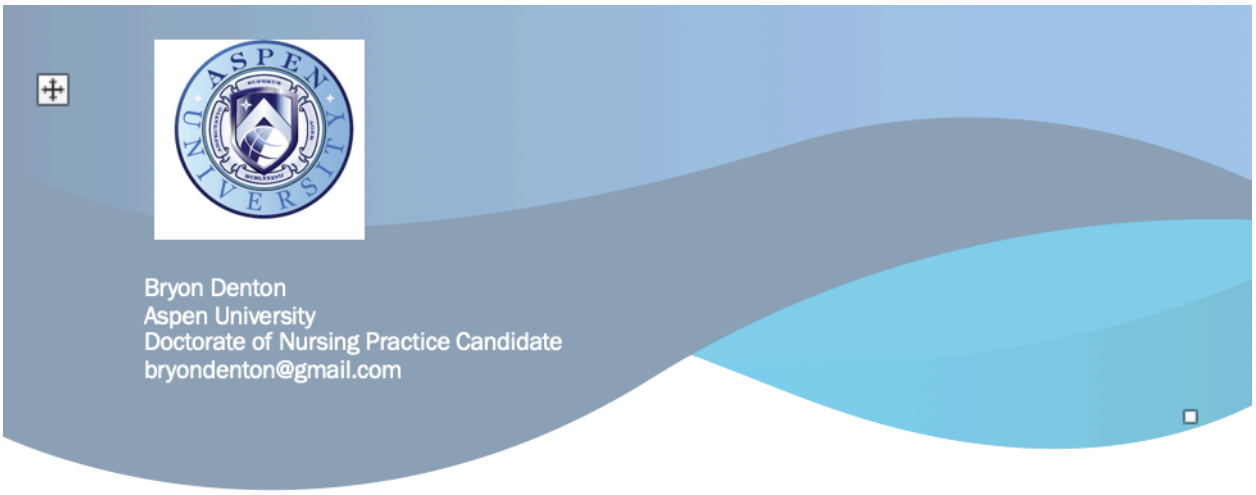
Aspen University, 1660 South Albion Street, Suite 525, Denver, Colorado 80222

registrar@aspen.edu and CC'ed to Dr. Nina Beaman at nina.beaman@aspen.edu • Appendix B

Appendix L


Write Post
Create Room
Photo/Video
More
(Survey Link here after survey published)
Hello,
I am a doctoral candidate at Aspen University seeking my Doctorate of Nursing Practice. As part of the requirements, I am required to complete a doctoral project. I am studying the effect of a peer-to-peer educational intervention on compassion fatigue and burnout in flight nurses.
I am recruiting flight nurses that currently practice in the United States to participate. The project will take approximately one-hour of your time and will take two steps.
1) Complete informed consents, demographics, the Professional Quality of Life (ProQOL) survey and complete an educational video.
2) Thirty days after you complete the video, you will receive an email with a link to complete the follow up ProQOL Survey.
Participation is voluntary and all responses and data will be kept confidential.
If you have more questions about this project, please contact me by direct message or email at bryondenton@gmail.com

Appendix M



Bryon Denton
Aspen University
Doctorate of Nursing Practice Candidate
bryondenton@gmail.com

Dear Flight Nurse/Manager,

My name is Bryon Denton and I am a Doctorate of Nursing Practice (DNP) candidate at Aspen University. As part of my doctoral education, I am completing a DNP project to evaluate the effect of peer-to-peer education on compassion fatigue and burnout in flight nurses. I am recruiting flight nurses who currently practice in the United States and are at least 18 years of age to participate.

Participation in this project will take approximately one-hour. If you would like to participate, I will ask that you:

1. Go to the following link (link added after published), signed the informed consent form, and complete the demographics information *(Approximately 5 minutes).*
2. Complete the Professional Quality of Life (ProQOL) survey (as directed after completion of the demographics information) *(Approximately 10 minutes).*
3. View the educational video (as directed after completion of the ProQOL survey) *(Approximately 50 minutes).*
4. Complete the follow up ProQOL assessment approximately 30 days after you watch the educational video (you will receive an email directly from SurveyMonkey) *(Approximately 10 minutes)*

Your participation is voluntary and there are no consequences for choosing not to participant or withdrawing. Confidentiality of all participants will be maintained and the data kept secure and protected.

Additional questions regarding the project can be direct to me, Bryon Denton, at bryondenton@gmail.com or (217) 714-6640. If you are interested in participating, please follow this link to begin: (link added after published)

Respectfully,
Bryon Denton, MSN, RN, CFRN, PHRN

Appendix N

Professional Quality of Life Scale (ProQOL)

Compassion Satisfaction and Compassion Fatigue
(ProQOL) Version 5 (2009)

When you *[help]* people you have direct contact with their lives. As you may have found, your compassion for those you *[help]* can affect you in positive and negative ways. Below are some-questions about your experiences, both positive and negative, as a *[helper]*. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the *last 30 days*.

1=Never	2=Rarely	3=Sometimes	4=Often	5=Very Often

_____ 1. I am happy.
_____ 2. I am preoccupied with more than one person I *[help]*.
_____ 3. I get satisfaction from being able to *[help]* people.
_____ 4. I feel connected to others.
_____ 5. I jump or am startled by unexpected sounds.
_____ 6. I feel invigorated after working with those I *[help]*.
_____ 7. I find it difficult to separate my personal life from my life as a *[helper]*.
_____ 8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I *[help]*.
_____ 9. I think that I might have been affected by the traumatic stress of those I *[help]*.
_____ 10. I feel trapped by my job as a *[helper]*.
_____ 11. Because of my *[helping]*, I have felt "on edge" about various things.
_____ 12. I like my work as a *[helper]*.
_____ 13. I feel depressed because of the traumatic experiences of the people I *[help]*.
_____ 14. I feel as though I am experiencing the trauma of someone I have *[helped]*.
_____ 15. I have beliefs that sustain me.
_____ 16. I am pleased with how I am able to keep up with *[helping]* techniques and protocols.
_____ 17. I am the person I always wanted to be.
_____ 18. My work makes me feel satisfied.
_____ 19. I feel worn out because of my work as a *[helper]*.
_____ 20. I have happy thoughts and feelings about those I *[help]* and how I could help them.
_____ 21. I feel overwhelmed because my case [work] load seems endless.
_____ 22. I believe I can make a difference through my work.
_____ 23. I avoid certain activities or situations because they remind me of frightening experiences of the people I *[help]*.
_____ 24. I am proud of what I can do to *[help]*.
_____ 25. As a result of my *[helping]*, I have intrusive, frightening thoughts.
_____ 26. I feel "bogged down" by the system.
_____ 27. I have thoughts that I am a "success" as a *[helper]*.
_____ 28. I can't recall important parts of my work with trauma victims.
_____ 29. I am a very caring person.
_____ 30. I am happy that I chose to do this work.

Appendix O

Q: I want to use the ProQOL for my research. How do I get permission to use it?

A: Permission to use the ProQOL is on the measure itself. See the research page on this site for more information.

Q: I understand that the ProQOL 5 is the current version of the Compassion Fatigue Self Test or the Compassion Satisfaction and Fatigue Test. What happens to the old tests?

A: The ProQOL is the current version of the earlier tests. The scales are the same and the "tone" of the measure is the same across the versions. The new version it is a much better test. It is more psychometrically sound, and it is shorter reducing the burden on the test taker. Additional information can be found in the ProQOL manual (www.proqol.org).

Q: May I use the ProQOL?

A: Yes. We encourage people to use the measure. The permission you need to use the measure is on the test itself in the footer.

Q: Do I have to pay for the ProQOL?

A: No. We have intentionally kept the ProQOL available at no or low cost in order to make it easy to use for anyone, anywhere in the world.

Q: May I make copies of the measure?

A: The permission that you need is in the copyright agreement at the bottom of the measure. You may use the measure freely as long as (a) author is credited, (b) no changes are made, and (c) it is not sold.

Q: May I reformat the ProQOL? For example, could I convert it into an online format or a recorded text for people with vision impairments?

A: You may reformat the measure to fit with your needs. Please make sure to keep the content the same.

Q: May I change the ProQOL to better match the people that I am working with?

A: Yes. We tried to use the most generic form of address we could find, "helper" but we recognize that this is not suitable for everyone. Thus, we include permission to replace the word helper and its derivatives with words that are more suited for your group. You will note on the measure that the terms are in bracket and italicized. You may replace the bracketed term with one that is more suitable for your group. If you are working with teachers, for example, you may want to replace helper with teacher and help with teach. For nurses, replace the word helper with nurse and help with nurse. For attorneys, replace the word helper with attorney and help with represent and so forth. You do not need to seek special permission to make these changes.

(ProQOL.com, 2019)

Appendix P

How to Manage Compassion Fatigue in Caregiving | Patricia Smith | TEDxSanJuanIsland

Transcript

Video time: 17:36

[Music]

[Patricia Smith speaking]

Hello and thank you for being here. I'm very pleased to be here. I'm going to talk to you about compassion fatigue and caregiving. If you have been a caregiver or you are now in the throes of caregiving or you will be called to caregiving, I hope this information will be helpful and useful to you now and in the future. Compassion fatigue in caregiving, navigating the road to wellness. During the Vietnam War, a young psychologist and first responder named, Charles Figley, noticed something very unusual was happening. As the wounded warriors were coming off the battlefield and sharing their stories of horror and trauma that they were experiencing on the battlefield, he noticed something funny was happening. It was indeed changing him and he didn't understand that, because he knew as a professional, how to protect himself. He started to feel less safe, he started to question his values and morals, and his whole quality of life just started to plummet. It was then that he had an "ah ha" moment and he said to himself, "something is happening here. I am taking on the pain and suffering of the wounded warriors and I am making it my own." In a sense, what he was doing was he was experiencing a secondary traumatic stress syndrome. This became his life's work and in 1995, he coined the phrase compassion fatigue. I first learned about compassion fatigue 20 years ago. I was a single mom with three kids. I worked two jobs. During the day, I was uh uh an editor with the college textbook publishing firm and at night, I worked as a correspondent for the San Jose Mercury News. When my last one

went off to college, my daughter, Elizabeth, my youngest, I said to myself, it's time to do something for me. Something that I want to do. I've always been a lifelong caregiver for animals. I've always loved animals. I realize that society has a flagrant disregard for animals. And I wanted to change that. I was going to save every animal that came my way. I also wanted to get into training and development. So, I enrolled in a year-long certification course at UC Santa Cruz and when I got my certification, I started to look for a job. Well, this was about 1999 and at that time, we found jobs on Craigslist. So, I went onto Craigslist and lo and behold, there it was…training and development manager, humane society, Silicone Valley. It was my job. So, I went and applied and several interviews later, I got the job. Two weeks into the job, the executive director came to me and said, "I'd like you to do a compassion fatigue training for the entire shelter." I said, "Sure, I'd be happy to do that." I was a new employee. I wanted to impress her. I wanted to do a good job, but what I realized is, I didn't know anything about that. I had never heard that term, compassion fatigue. So, I went up to my office and I googled it. What came up was the academic writing of Dr. Charles Figley and the Professional Quality of Life Self-Test, that's the work of Dr. Beth Hudnall Stamm, who at that time was the director of the Institute for Rural Health at Idaho State University. Well, much to my surprise, after reading all the material and taking the Professional Quality of Life test, I realized that I suffered from very, very, very high levels of compassion fatigue. It had probably destroyed my quality of life for many, many years. This started me on a journey to learn more about this and in the meantime, I started the compassion fatigue awareness project and it has brought me on a road to wellness, that has brought me here today. In the fourth century, we have this wonderful comment. This is the fourth century. This man said this, "Life is not merely to be alive, but to be well," and this is the core of my teaching, of my education, is to try to teach educ… excuse me, caregivers, that

they can't just go through the whole process of caregiving, just everyday trying to do the best they can. They actually had to be well. And, what does that mean? We're integrated human beings. We're talking about body, mind, and spirit. Teaching them to be self-compassionate caregivers. Every day to do something for themselves. So why do some people get compassion fatigue and some people don't? What are the symptoms? How do we recognize it in ourselves and in others? Dr. Figley says, "Compassion fatigue is a state experienced by those helping people or animals in distress; it is an extreme state of tension and preoccupation with the suffering of those being helped to the degree that it can create a secondary traumatic stress for the caregiver." So, what are the symptoms? How do we recognize it? It's a rough road, believe me, I know. I've been there. The first thing is we notice we want to isolate. Why do we want to isolate? Because everyone is asking of something for us, from us, and we don't have anything left to give. We're fairly depleted. The rhythm of a health caregiver is fill up, empty out, fill up, empty out, fill up, empty out, every single day. Well, if we deplete, deplete, deplete, you can see what happens. We get this set of symptoms and remember, this is only a set of symptoms. It's not a disease. It is fixable and I'm going to show you how we can do this. So, isolation. We want to isolate. We don't want anyone else to bother us. Emotional outbursts. Where does that come from? It comes from the fact that in our early childhood, in our formative years, we learned, we did not learn good coping skills and we learned to just push down everything in order to deal with our lives, if indeed there was trauma and pain and suffering in our early lives. So, we push it down, and we push it down, and we push it down, until sometimes the human body says, I've had enough of you and it comes out as an emotional outburst. Physical ailments. What are these? You go to the doctor. You say, "Doctor, I feel just terrible and I can't get well. I don't know what's wrong with me." What is it? It's the headache that won't go away. It's that scratchy throat

that's always there. It's that pain in the back of the neck. It's the shoulders that are so worn out because we're carrying such a heavy load. It's that lower back ache that keeps us from living a full happy quality of life, because we can't do what we want to do. It's the gastrointestinal problems. And what are those? Those are the stress points of the human body. The body saying to us, "stop, stop, you're hurting me," but we don't listen, because we've got to keep going and going and going. A them versus us mentality, and this is just the fact that we always feel we're other-directed and everything is out there. The problems, the challenges, the answers, are all out there, so we set up a them versus us, when in reality, all of our answers are inside. Healing is an inside job. From the inside out, not from the outside in. Substance abuse. We all know, we read it every day, we know that this is going on in our society. Americans are self-medicating, but we're not self-medicating with good food, and exercise, and health relationships. No, we're reaching for the chocolate and the overeating, and the gambling, and the pornography, the drug abuse, the tobacco. We all know we do it. There's no shame in it, we all do it. Sadness and apathy, and this is that veil of sadness that's, that's over us all the time. I know, I suffered from that terribly. I would go to parties or events, or even at work, and everybody was happy and I never quite understood why I didn't have those same things going on in my life. So, sadness and apathy because we're not living that full quality of life, which is our full human potential. Flashbacks and reoccurring nightmares. When this happens to you, the chances are very good that you probably need some professional help with a mental health professional. The one thing I can say is, make sure that your therapist, psychologist, psychiatrist knows what compassion fatigue is. Often times, they recommend, go to Hawaii for a couple of weeks. Make you feel much better. Oh, it will for two weeks, but then you'll come back and you'll fall right back into the crevice of compassion fatigue. So, what causes it? Why do some of us get it, some of us don't? Well, as

most things, it begins in early childhood, these patterns. The pattern of other directedness, somewhere along the line, we learned that it's more important to take care of others before we take care of ourselves. And when we try to take care of ourselves, we have feelings of shame and self-centeredness, and selfishness, and we have to overcome this. If indeed we don't fill ourselves up, we have nothing left to give others. It's that simple. A lack of strong personal boundaries. If we suffer from the effects of compassion fatigue, our personal boundaries are way out here. We let everything and everyone into our lives and oftentimes it's hurtful and it doesn't help us at all. The journey to wellness is bringing in those personal boundaries. We decide what we will and won't allow in our lives. And this is very difficult. It sounds simple, but I can tell you, it is the most difficult thing you'll ever do. Learning to become, from other directed to self-directed is the most difficult journey, but it is worth every minute of the work. Unresolved past pain and trauma. That lives within us. We keep pushing it down and pushing it down, but it's in there and it's going to come out. We have to learn ways in which to let go of the trauma that we experience. We can do it with rituals, we can do it all different ways because what doesn't move through us, defines us. Overdeveloped sense of responsibility. And again, this comes from that early childhood. There might have been drug abuse or alcoholism or physical abuse in the family and, as little people, we watch this going on and we became very responsible for everything and we carried these patterns into childhood and we feel like we owe the whole world. We're responsible for everything. And an impulse to rescue anyone in need. Where I saw this and I continue to see it as I travel the country, is in animal welfare work. When I was at the shelter as a training and development manager, the young people often came to me and said, I have a problem. Maybe you can help me. And I said, "What is it?" "Well, I've adopted six dogs, five cats, three guinea pigs, a garter snake, and there was a pot-bellied pig, and I was thinking of

taking that home too." 'And I said, "Well, you know, what are you going to do about this?" and I said, "I don't know. I'm in a one-bedroom apartment with three other people." The, the personal boundaries, you know. If you, if you adopt one dog, you know take home one cat, you've done your job. So, we try to shrink down their, their impulse to rescue anyone in need. And we all worked with people, probably, that have done this. So where do we start? How do we start making our lives better? How do we lift our quality of life, so that we're happy, healthy human beings? We start with creating a self-care plan. And people say to me all the time, I don't have time for that. I'm too busy caregiving. I'm too busy doing other things. I don't have time for a self-care plan. And my answer to that is you need to make time. Get up a half an hour earlier and run or walk or meditate or do yoga. Make that time for yourself. Absolutely important. So authentic sustainable self-care. We need to do what's authentic to us. And this is a road we have to travel as well. We have a world today that is constantly telling us who we are, who we should be with, what school we should go to, what we should eat, what color our hair should be, what color we should wear this fall. All of that is being bombarded on us and in order to find our true north, we need to spend time with ourselves and figure out who we are and be that authentic person. And it has to be sustainable, because, boy, it just keeps coming. You may be caregiving now and at some point, the caregiving will end. But it will happen again. It's just the way life is. We take care of each other. That's what we're about. Empathic discernment. We need to figure out what hurts us. And if something comes at us, a photograph or post on Facebook, or something like that, we have to learn when to say, "Stop. This is hurting me," and stop looking at that. If someone says something hurtful to you, "Please don't say that to me. You're hurting me." It's okay to do that. Ask for help. Caregivers are not good at asking for help. Strengthen your resiliency. We now know that this is something that isn't genetic. We all have the ability to be

more resilient. We need to practice it. Live a balanced life. Fill up, empty out. Fill up, empty out. Embrace spirituality. New studies show that we all need a form of spirituality. It doesn't need to be a traditional form of spirituality. It can be anything you want it to be. We live in Friday Harbor. My gosh. Go watch the Orcas. There's no higher form of spirituality than watching the beautiful creatures. Be mindful. Mindfulness is a huge thing right now. They're using it in schools. They're using it everywhere. It means being 100% present in what we're doing. And what more beautiful gift can we give others…to be 100% present for them. And be grateful. Be grateful that you've been called to caregiving. It's a precious and sacred gift. Leo Buscaglia is, well he's no longer with us, but he once said in this phrase, "Too often we underestimate the power of a touch, a smile, a kind word, a listening ear, an honest compliment, or the smallest act of caring, all of which have the potential to turn a life around." As caregivers, we have that in our hearts and hands. We have the ability to change the world. We have the ability to change a life. I know this is true, because it happened to me. Many, many years ago when I was going through this and learning all about compassion fatigue, I left the shelter because I was so terribly burnt out. And what did I do? I took the job as director of programs at Ronald McDonald House at Stanford. I traded euthanizing animals for working with dying children and their families. At that point, I was pretty much on all fours and I thought, if I don't do something for myself, I'm not going to recover from this. So, I moved to the coast of California to a little village called Capitola. I rented a small studio apartment about the size of my thumbnail and I lived on credit cards. I would not recommend that, but you know, sometimes in life, we do what we have to do. So, every day from my little apartment on Depot Hill, I would walk down into the village, down and around, beautiful ocean there, up around the train trestle, by beautiful, on the right-hand side, beautiful shadow brick restaurant, left-hand side the parking for the restaurant, and I would walk

a couple more blocks and I would go to the library and I would take out books free of charge. One day after months and months of doing this ritual, trying to clean out the cobwebs and resolve some past pain and trauma, I walked by the restaurant, the restaurant, and I looked to the left-hand side and there in the parking lot, in the corner, was a pedestal about this tall, a wooden pedestal, and on top of it was a wooden hand-carved frog of equal size. This thing was big. I thought, I've never seen that before. They must have just put that there last night. So, I walked across the parking lot and I was in awe of this thing. I walked around it several time and enjoyed looking at the beautiful artwork. And out of the corner of my eye, I could see this man walking toward me. I think he had a straw hat on, but I'm not sure. Anyway, when he got up to me, I said, "Hey, do you know anything about this frog?" I said, "I've been walking here for months and months and months, and I've never noticed it. I think they put it here last night." He said, "Oh no." He says, "That's an icon, it's a historic icon here in Capitola. He's been sitting there for a lot of years." And I said, "Well, then I guess maybe today it's a sign for me. It's telling me, I'm ready to croak." He looked at me and said, "Oh my dear. No. It's telling you you're ready to jump." And with that, I look back at the frog and I turn to thank the man for his kind words and he was gone. He was gone. I ran to the side of the road. I looked to the left. I looked to the right. I ran to the other side of the road. I looked to the left, I looked to the right. He was gone. Seemingly, he disappeared in thin air and to this day, I believe he did. But I can tell you that his words changed my life. Shortly after that, I put two and two together. I connected the dots and I did some wonderful things in my life to help others, which I continue to do today. I know that all these years, and that has been a long time, his words are still with me, because whenever I'm afraid or I'm nervous or I'm sat, upset, or I'm frustrated, his words pop into my brain and it says, "Jump," and I do and it has made all the difference. Thank you. (TEDx Talks, 2017).

Appendix Q

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(TED, 2020)

Appendix R

Informed Consent Form

Title of Project: Effect of an Educational Intervention on Compassion Fatigue and Burnout in Flight Nurses

Introduction:
The purposes of this form are to provide you (as a prospective project participant) information that may affect your decision as to whether or not to participate in this project and to record the consent of those who agree to be involved in the project.

Bryon Denton has invited your participation in a Doctor of Nursing Practice (DNP) project. I am completing this scholarly project as part of my doctoral degree.

Purpose of Project:
The purpose of this DNP project is to evaluate the effect of a peer-to-peer educational intervention on the levels of compassion fatigue and burnout in the flight nurses. By evaluating the levels of compassion fatigue and burnout in flight nurses, this project will contribute to the overall knowledge of the prevalence of compassion fatigue and burnout. By evaluating the levels of compassion fatigue and burnout in flight nurses before an educational intervention and two weeks after the educational intervention has been completed, this project will contribute to the knowledge on treatment and prevention of compassion fatigue and burnout, not only for flight nurses, but all nurses. This project intends to contribute value to the air medical industry by reducing compassion fatigue and burnout and providing flight nurses with a method to reduce these conditions.

Eligibility:
You are eligible to participate in this project if you are 18-years of age, a flight nurse, reside in the continental United States or any of its territories, and are willing to participate.

Description of the Project Activity:
If you decide to participate, then as a project participant you will be asked to utilize the internet to complete demographics information, which will take approximately one minute. You will then be asked to complete an assessment tool known as the Professional Quality of Life (ProQOL) survey on a website. The ProQOL survey will ask questions about your feelings and you will be asked to select a corresponding number to your feelings. Completion of the ProQOL assessment will take approximately 10-15 minutes. Following the completion of the ProQOL survey, you will be asked to follow a link to a web-based video to learn about compassion fatigue and burnout for flight nurses and to download a handout on compassion fatigue and burnout in flight nurses. Viewing the video will take approximately 55 minutes. The handout can be utilized electronically or by printing and is yours to keep. Downloading the handout will take approximately one minute. Thirty days following the completion of the education, you will receive an email from SurveyMonkey® requesting that you complete the follow up survey. You will complete the same ProQOL survey again. Completion of the follow up survey will take approximately 10-15 minutes.

Approximately 45 subjects will be participating in this research study.

Risks:
While this project poses minimal risk to you, if you decide to participate in this project there is a minimal risk that your confidential information could be released. You will be required to enter your email address in the demographics section of the survey. Your email address will be utilized to email you a reminder to complete the follow up survey and to connect your pre- and post-intervention surveys for analysis. Your email address could inadvertently identify you.

To decrease the impact of these risks, you can: stop participation at any point in the study, use an email address that does not identify your name, or create a free email account with an online service such as gmail.com or yahoo.com, to use during the project survey.

Additionally, the ProQOL survey tool asks questions that may trigger emotional feelings about past experiences in your workplace. If you feel that these feelings cause you to have an emotional response that you cannot control, please contact your medical provider for assistance.

Benefits:
Benefits of participating in this project include an increased self-awareness and knowledge of compassion fatigue and burnout. This project may also benefit air medical organizations and medical flight crew members by creating an awareness of the prevalence of compassion fatigue and burnout amongst flight nurses and assist in reducing turnover rates in the air medical industry. This project may also pave the way for additional studies in the air medical community concerning compassion fatigue and burnout.

Confidentiality:
All information obtained in this study is strictly confidential unless disclosure is required by law. The results of this project may be used in reports, presentations, and publications, but the project manager will not identify you. In order to maintain confidentiality of your records, Bryon Denton will utilize the SurveyMonkey® system to keep email addresses confidential. The SurveyMonkey® system is encrypted to ensure that hacking or inadvertent release of information cannot occur.

The people who will have access to your information are: the project manager and my dissertation committee.

I will secure your information with these steps: All data obtained from the surveys will be housed on a computer that is locked with a passcode. The passcode is only known by the primary investigator and the computer is only used by the primary investigator. To further secure the confidential information, the data will be secured in a secure folder on the computer that requires an additional and different passcode to access.

I will keep your data for 3 years. Then, I will delete electronic data and destroy any paper data.

Withdrawal Privileges:
It is okay for you to decline to participate in this project. You are free to stop participating at any time and there will be no penalty to you.

If you decide to stop participation, you may do so by simply exiting out of the survey window or the video interventions.

Costs and Payments:
There is no financial cost to you as a participant in this project, nor is there payment for your participation.

Voluntary Consent:
Any questions you have concerning the project or your participation in the project will be answered by the project manager:

Bryon Denton, MSN, RN, CFRN, PHRN
bryondenton@gmail.com or (217) 714-6640

The faculty project committee chair may also be contacted:
Dr. Vivienne McDaniel, DNP, RN, CCS-P
Vivienne.mcdaniel@aspen.edu or (804) 739-0430

If you have questions about your rights as a subject/participant in this project, or if you feel you have been placed at risk, you can contact the Institutional Review Board at IRB@Aspen.edu

This form explains the nature, demands, benefits and any risk of the research study. By clicking "I Agree' you confirm that you are 18 years or older, understand the content of this form, and agree to participate in this project.

Appendix S

Compassion Fatigue & Burnout for Flight Crew

Bryon Denton
MSN, RN, CFRN, PHRN

Prepared as part of a DNP project for Aspen University

What is it?

Compassion Fatigue (CF) - Gradual erosion of compassion as trauma is experienced in other people

Burnout (BO) – State of exhaustion caused by excessive or prolonged stress exposure

Symptoms of BO:

- Alienation from work projects
- Cynicism
- Headaches
- Lack of energy
- Reduced performance
- Sense of failure
- Feel trapped
- Depersonalization

Symptoms of CF:

- Sleep problems
- Increased alcohol use
- Anger
- Exaggerated sense of responsibility
- Can't separate work and personal life
- Guilt
- Loss of hope
- Decreased feelings of empathy

Difference between CF & BO:

BO is a result of workplace stressors and institutional issues, whereas CF is the result of stresses generated from being empathetic to the suffering of the patient.

Prevention & Treatment:

- Get educated
- Practice self-care
- Set emotional boundaries
- Find outside hobbies/interests
- Maintain work/life balance
- Boost resilience
- Personal counselling
- Talk about it
- Find job with satisfaction

Who is at risk for CF?

Professionals that care for patients that experience life-altering trauma or illnesses

Where can I go for more info?:

Learn more and take CF & BO self assessment (ProQOL) at

www.compassionfatigue.org