

Nurse Resilience: Implications on Critical Care Nurse Shortage and Proposed Intervention

Submitted by

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GRAND CANYON UNIVERSITY

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## **Abstract**

Critical care nursing is experiencing a high turnover and a global shortage crisis. The number of critical care nurses (CCNs) leaving the critical care environment is at an unprecedented high rate, negatively impacting the quality of care for the most critically ill of patients. It is not known if and to what extent CCNs resiliency is affected by self-care and how it is associated with compassion satisfaction, interprofessional relationships, professional quality of life, psychological and psychosocial impairment (PPI), or intent to leave the critical care specialty area. The purpose of this quantitative, cross-sectional, descriptive project was to ascertain if the independent variable for CCNs self-care had an associative relationship among five dependent variables reflective of CCNs resilience: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. An innovative, web-based CCN self-care intervention was introduced and outcomes measured through the administration of a descriptive survey pre- and post-assessment to determine relational association to the variables of CCNs resilience. The project, though limited by time constraints, inferred CCNs and non-CCNs respondents are interested in self-care and creating healthy critical care environments for safe patient care.

*Keywords:* resilience, critical care, stress management, burnout, compassion

## Dedication

I would like to dedicate this practice improvement project to all the Critical Care Nurses that I have worked with and those that I have not. The walking wounded and the wounded healers that have given so much to care for others and their loved ones, while too often giving less to their own loved ones and themselves. As Remen (1996) observed, "The expectation that we can be immersed in suffering and loss daily and not be touched by it is as unrealistic as expecting to be able to walk through water without getting wet". It is time to look inward and not only heal thyself through nurturing and self-love, but to extend it to your loved ones, and to the sisters and brothers of your profession to transcend the pain with caring and compassion for the healing of all.

*"Therefore, as God's chosen people, holy and dearly loved, clothe yourselves with compassion, kindness, humility, gentleness and patience." (Colossians 3:12)*

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## **Chapter 1: Introduction to the Project**

Critical Care Nursing is an advance practice nursing specialty that is experiencing a high turnover and a global nursing shortage crisis (Moss, Good, Gozal, Kleinpell, & Sessler, 2016). Critical Care Nurses (CCNs) practice within a complex and stressful environment caring for the most acutely ill patients in health care (Mealer, Jones, & Moss, 2012). These critical care settings are psychologically demanding, as the CCNs deal with high-stake life events and emotionally charged patient and family life situations (Hinderer et al., 2015; Mealer et al., 2012). The safety and health care outcomes of critical care patients are impacted negatively by the attrition of CCNs in the critical care setting (Mealer et al. 2012; Rushton, Batcheller, Schroeder, & Donahue, 2015).

CCNs lacking self-awareness and adequate coping mechanisms may become overwhelmed with the cumulative effect of the stress and human suffering they are exposed to, negatively impacting the patients' care and outcomes. The detrimental effects of adverse and vicarious stress on the psychological and psychosocial well-being of the CCNs have been studied extensively. Studies conducted by Hinderer et al. (2015), Johnson (2015), Kelly, Runge, and Spencer (2015), Mealer et al. (2012), Moss et al. (2016), and Sheppard (2015) include explorations for the underlying causes for decreased compassion satisfaction, increased prevalence of compassion fatigue, burnout, moral distress, secondary traumatic stress syndrome (STS), post-traumatic stress syndrome (PTSD), and the reduced capacity for CCNs to administer empathetic and compassionate patient care.

Critical care environments are entrenched with psychologically and psychosocially impaired (PPI) nurses due to inadequate resiliency or the capacity to cope and adapt to the onslaught of stress on a daily basis. The ensuing coping mechanisms for self-protection may

include depersonalization and the loss of empathy and caring behaviors for self and could develop into a disparaging relational communication (incivility) with others (Christie & Jones, 2014; Maslach & Jackson, 1981; Mealer et al., 2012; Mealer et al., 2014; Rushton et al., 2015; Zerubavel & Wright, 2012). Minimal research was found that explored the actual implementation of interventions to prevent or therapeutically moderate the harmful effects of adverse stress on CCNs. The supposition for whether a CCN's self-awareness for self-care as an intervention to build or strengthen resilience emerged (Mealer et al., 2014). In addition, it was conjectured, the promotion of self-care and healthier coping and adaptation to stress may have a positive effect on the critical care environment through improved interprofessional relationships and relational communication. Improved and more effective CCNs' communication has been cited as a factor in the reduction of hospital-acquired complications in critical care patients (Carlson, Spain, Muhtaldie, McDade-Montez & Macia, 2015; Hersch et al., 2016; Petit & Duffy, 2015; Richards, 2015). Further assessment of these premises for enhancing CCNs' resilience through self-care, and CCNs self-efficacy for fostering self-care in all facets of life including the critical care environment were warranted.

CCN's self-care awareness and practice for enhancing resilience to adverse stress may present a plausible therapeutic intervention to mitigate stress-related PPI and attrition. The American Nurses Association (ANA) (2015) issued a statement calling for the accountability and advocacy of each and every nurse for improving civility and professional ethics in the workplace. Positive peer-mentoring for professional and ethical behaviors that influence healthy nurse-to-nurse relationships starts with each CCN (ANA, 2015; Padgett, 2013). Moss et al. (2016) released a statement from the Critical Care Societies Collaborative (CCSC) consisting of members from the American Association of Critical-Care Nurses (AACN), the American

College of Chest Physicians (CHEST), the American Thoracic Society, and the Society of Critical Care Medicine, regarding the increasing prevalence of burnout of critical care healthcare professionals (HCPs), and reported to date there are no large research studies that have explored strategies to prevent or treat burnout in critical care healthcare professionals. Two categories were presented by Moss et al. for focused interventions: 1) improving the critical care environment and 2) helping critical care personnel (CCNs) cope with their environment. It is recognized that the problem is multidimensional and therefore will require innovative multimodal interventions to mitigate the stress-related psychological effects on CCNs working in critical care (Canadas-De la Fuente et al., 2015; Cherry, 2016; Consiglio, 2014; Hersch et al., 2016; Laschinger, Borgogni, Consiglio, 2015; Merlani et al., 2011; Turner, 2014).

The literature review produced one study by Mealer et al. (2014) that explored the feasibility of a resilience program in an intensive care unit (ICU), and affirmed it was an acceptable and feasible intervention for CCNs to prevent burnout and PTSD. Following the premise of mindfulness for self-care and self-compassion mitigated compassion fatigue, Duarte, Pinto-Gouveia and Cruz (2016) suggested training in self-compassion as a therapeutic intervention (Hersch et al., 2016). As an added benefit, the CCNs extending self-care into the critical care environment may assuage negative behaviors and disparate relational communications. Improved interpersonal interactions are conducive to safer critical care environments with positive impacts on patient outcomes, professional relationships, and the recruitment/retention of CCNs (Christie & Jones, 2014; France, Byers, Kearney, & Myatt, 2011; Lowe, 2013). Improved interpersonal communication between CCNs, HCPs, patients and family members improves patient safety and outcomes as it reduces the potential for medical errors and iatrogenic complications (Moss et al., 2016).

The nursing science knowledge gap is found between the causative research versus the actual implementation of theoretical and evidence-based innovative interventions and their documented efficacy in amending the problem. Moss et al. (2016) asserted the critical care community has only recently become cognizant of the harmful effects of working in a critical care environment. Direct and immediate implementation of therapeutic interventions is necessary to ameliorate the problem. Moss et al. noted the number of CCNs leaving the critical care environment to be at an unprecedented high rate of 13-20%. The loss of CCNs at the bedside has a negative influence on the quality of care received by the most critically ill of patients and on health care costs. The doctorate in nursing practice (DNP) student's direct practice improvement project (DPI) will optimistically contribute to the nursing science knowledge for the efficacy of the project improvement interventions for CCNs' awareness of self-care, including mindfulness for self-compassion and assessment for associative relationships to CCNs' resilience reflected by compassion satisfaction, predisposition and/or recovery from PPI, and intent to leave the critical care specialty area. Enhanced CCNs' resilience and compassion satisfaction has shown to positively improve patient safety and outcomes (Durarte, Pinto-Gouveia & Cruz, 2016; Hersch et al., 2016; Laschinger & Fida, 2014; Li, Black, & Garland, 2016; Lowe, 2013; Mills, Wand, & Fraser, 2015; Moss et al., 2016; Padgett, 2013; Rushton et al., 2015; Santos et al., 2016; Taormina, 2015).

The focus of the DPI project was to bring CCNs to a self-awareness of self-care on their overall well-being and assess for associative relationships to CCNs' resilience measured by CCNs': (1) compassion satisfaction, (2) interprofessional relationships, (3) professional quality of life, (4) PPI, or (5) intention to leave the critical care specialty area. The aim of the quantitative, cross-sectional, descriptive project was to assess the efficacy of an innovative, web-

based, CCNs' self-care intervention upon a targeted population of practicing CCNs in adult critical care areas across the United States. The innovative multimodal self-care focused program titled *Nursilience* was developed based on Hersch et al.'s (2016) web-based stress reduction program for nurses. Modifications were made to the program to address the multifaceted aspects of self-care for CCNs (see Appendix B). The concept of the *Nursilience* program envisioned the enhancement of CCNs' resilience and the prevention and recovery of stress related psychological and psychosocial impairments (PPI) through CCNs' self-care. The *Nursilience* program included mindfulness for self-compassion, and meaningful stress reduction activities. The promotion of CCNs self-efficacy and advocacy for positive peer-mentored behaviors in the workplace was presented as a dimension of self-care in the *Nursilience* program to further enhance CCNs' resilience and retention in the critical care specialty area (Duarte et al., 2016; Padgett, 2013; Santos et al., 2016). Intent to leave is a significant predictor of three things: (a) the actual CCNs turnover, (b) the negative consequences on patient care outcomes, and (c) the remaining CCNs' well-being (Bolima, 2015; Choi, Cheung, & Pang, 2013; Mantler, Godin, Cameron, & Horsburgh, 2015).

### **Background of the Project**

Critical care areas are complex with fluctuating levels of stress intensity and human adversity (Hinderer et al., 2014; Hunsaker, Chen, Maughan, & Heaston, 2015; Merlani et al., 2011). CCNs are faced with frequent, highly-charged emotional and traumatic life-changing events in the care of critically ill patients and their families (Rushton et al., 2015). Compassion satisfaction portrays the positive feelings experienced by the CCNs and the sense of gratification derived from caring for the critically ill patients (Sacco, Ciuzyński, Harvey, & Ingersoll, 2016). Compassion fatigue occurs when a CCN has had a repetitive and prolonged exposure to

secondary traumatic stress or vicarious emotional trauma, often experienced through the transference of emotional distress from the patients and/or their families (Canadas-De la Fuente et al., 2015; Carlson, Spain, Muhtadie, McDade-Montez, & Macia, 2015; Duarte et al., 2016; Kelly et al., 2015; Sacco, Ciurzynski, Harvey, & Ingersoll, 2016; Shoorideh, Ashktorab, Yaghmaei, & Hamid, 2015; Ulrich, Lavondero, Woods, & Early, 2014). The cumulative effect of emotional and psychological distress produces feelings of despair, diminished feelings of accomplishment, and emotional exhaustion, all hallmarks of burnout (BO) (Zerubavel & Wright, 2012). A CCN's achievement and preservation of the balance between compassion satisfaction and compassion fatigue in the critical care workplace and personal-life is essential for a positive work-life balance and psychological and psychosocial well-being (Mills et al., 2015).

Compassion satisfaction may bestow a sense of resiliency to the human spirit and abate compassion fatigue (Brown, 2015; Hegney et al., 2014; Hersch et al., 2016; Johnson, 2015).

Resilience has been identified as a multifaceted construct that is associated with an individual's determination and capacity to endure, adapt, and recover from adversity (Mealer et al., 2012; Mealer & Jones, 2013; Mealer et al., 2014; Taormina, 2015). CCNs that possess higher levels of resiliency have exhibited an enhanced capacity to adapt and cope with the adverse complexities and stress of CCNs' work in the critical care environment, and maintain a sense of compassion satisfaction (Mealer et al., 2014). Resilience may be taught through cognitive behavioral therapy for self-awareness, self-care, and mindfulness interventions Mealer et al., 2014). The process may positively affect a nurse's ability to adapt and cope with stress and adversity, and potentially initiate a therapeutic recovery experience from sustained psychological trauma. The premise aligns with the DPI study's self-care intervention and theoretical concepts to positively affect CCNs' resilience (Sacco et al., 2015).



Nursing is a profession of caring and service to humanity. Often the altruistic reasons for which nurses enter the profession are the same sentiments that predispose them to personal and/or professional psychological trauma (Zerubavel & Wright, 2012). CCNs are at a higher-risk to develop PPI than nurses in other practice areas due to the high intensity and frequent exposure to high-stakes emotional stress in the critical care setting (Mealer et al., 2014; Rushton et al., 2015; Shoorideh et al., 2015). The CCN's coping mechanisms may become ineffective, and they may potentially express their psychological pain with psychosocially dysfunctional behaviors as exhibited by incivility and/or lateral violence (Christie & Jones, 2014; Consiglio, 2014; Mantler et al., 2015).

The application of Conti-O'Hare's (2002) wounded healer theory was proposed by Christie and Jones (2014) to address the negative and destructive behaviors of incivility that have become pervasive in nursing and have created a crisis in workplace violence in all nurse work settings. CCNs suffering from PPI may exemplify the walking wounded to the emotionally wounded nurse with dysfunctional coping behaviors. Consiglio (2014) found that negative PPI symptoms relate to two things: first, the CCNs' inadequate levels of resilience and capacity for coping, and second a prolonged exposure of adverse stress and interpersonal strain in the CCNs' work environment. These symptoms may very well contribute to nurse-to-nurse incivility. Lachman (2015) reported that in 2008 the Joint Commission addressed the disruptive behaviors of incivility and lateral violence in response to the increased potential for patient harm related to disruptive behaviors and dysfunctional relational communications. According to Lachman, these behaviors were cited as causative factors for increased medical errors and breaches in patient safety.

The ANA (2015) issued a position statement that dealt with bullying and workplace violence. The statement covered the accountability of nurses and the organizations that employed them to create ethical work environments and cultures based on civility and kindness. Furthermore, nurses were to treat all colleagues, disciplines, staff, students, and others with dignity and respect. The ANA position statement upheld that nurses must also be treated with respect and dignity. Moss et al. (2016) reported on a subsequent position statement released by the Critical Care Societies Collaborative (CCSC) in 2016 to raise awareness, and serve as a call for action to address the prevalence of burnout in critical care HCPs. The CCSC focused on the harmful consequences to patients, and the negative CCNs relationships that fueled the global shortage crisis of CCNs and HCPs. Healthy CCNs' relationships are crucial to the health and safety of the critical care work environment. CCSC presented potential interventions to prevent and treat stress-related psychological effects of the critical care environment. According to Moore, Leahy, Sublett, and Lanig (2013), nurses must be empowered to resolve conflicts amongst themselves. Nurses need to become more cognizant of how they interrelate and the impact on the patients they care for, other nurses, the health care organization, and the nursing profession. Every nurse is accountable as a frontline advocate to embrace a regeneration of their worldview values, and each nurse must foster positive relationships through self-efficacy and peer-mentoring that emphasizes caring, ethical, and moral behaviors (ANA, 2015).

Through the self-efficacy and advocacy of caring and compassionate relational communications by each CCN, a culture of resilience and healing may be realized (ANA, 2015; Moore et al., 2013). Each CCN must (a) inspire accountability through peer-mentoring, (b) foster professional and ethical behavior, and (c) provide quality of care. Peer-mentoring is based on empowerment of each nurse to champion and model professionalism and civility and

constructive behaviors towards developing collegial relationships. As related by Padgett (2013), healthy peer relationships in nursing are vital for (a) coordinating patient care with positive relational communication, (b) ensuring quality and safety, and (c) instituting and sustaining ethical competence for the professional standards of nursing (Duarte et al., 2016; France, Byers, Kearney, & Myatt, 2011).

Conti O'Hare's (2002) nurse as wounded healer theory aptly illustrated CCNs with PPI. Zerubavel and Wright (2012) illustrated CCNs with PPI as the walking wounded. Christie and Jones (2014) applied the nurse as wounded healer theory and the walking wounded to lateral violence and incivility in the nursing profession. Following the nurse as wounded healer theory, the CCNs with PPI are portrayed as the walking wounded who are transformed through self-healing and spiritual transcendence to a wounded healer. The wounded healer through self-actualization aspires to heal others through their own servant leadership and spiritual empowerment (Conti O'Hare, 2002; Christie & Jones, 2014; Zerubavel & Wright, 2012). The proposed theoretical underpinnings support the self-advocacy of each CCN in caring and compassion for themselves, as well as in their nurse-to-patient, nurse-to-nurse, and interpersonal relationships (Hersch et al., 2016; Laschinger, Cummings, Wong, & Grau, 2014; Mills et al., 2015; Montes-Berges & Augusto-Landa, 2014; Papathanasiou, Tsaras, Neroliatsiou, & Roupas, 2015; Petit & Duffy, 2015; Sacco et al., 2016; Slatore et al., 2012; Trossman, 2014; Ulrich et al., 2014).

### **Problem Statement**

It is not known if and to what extent CCNs' resiliency may or may not be affected by self-care or associated with compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. The symptomatic

presentation of PPI resulting from burnout, compassion fatigue, moral distress, STS, and PTSD are the leading causes cited in the literature for CCNs to leave the critical care specialty or the nursing profession altogether (Hinderer et al., 2014; Merlani et al., 2011; Moss et al., 2016; Rushton et al., 2015; Shoorideh et al., 2015). Unfortunately, the nurses that remain and coexist may also be suffering from stress-related PPI (Christie & Jones, 2014; Mantler et al., 2015; Mealer & Jones, 2013; Mealer et al., 2012; Moore et al., 2013). The CCNs may be in crisis and should be considered impaired practitioners, depicted as the walking wounded by Conti O'Hare (2002) in her nurse as wounded healer theory, and as conjectured by Christie and Jones to be concomitant with incivility and lateral violence in nursing. Remen (1996) explained that we are all healers, and our own wounds give us compassion for the wounds of others. As Mathieu and Cameron (2007) reflected on Remen's comments, they stated that it is unrealistic for caregivers who are daily immersed in their patients' pain to emerge from those experiences without being touched by them.

The theorists Conti O'Hare (2002), Christy and Jones (2014), and Zerubavel and Wright (2012) proposed the CCNs' coping strategies and abilities are ineffective, and the impact of their traumatic experiences goes unrecognized and unresolved. Christy and Jones relate emotional wounds or scars incurred by these events may cause problems with these individuals' relationships in all facets of their lives. As inferred by Zerubavel and Wright, these walking wounded are in denial of their own personal suffering and psychological injury, and project their *woundedness* on their patients and co-workers without recognizing their own PPI and stunted ability to empathize with others. Negative and demeaning nurse-to-nurse interactions as a possible result of PPI is the cultural norm in many clinical areas including critical care environments (Christie & Jones, 2014). New CCNs report being presented to and mentored in

these unhealthy environments (Consiglio, 2014; Mantler et al., 2015; Moore et al., 2013; Saltzberg & Clark, 2015; Walrafen, Brewer, & Mulvenon, 2012).

According to Bandura's (1977) social learning theory, the new nurses may emulate the behavior they are immersed in as a mechanism of survival known as *reciprocal determinism*, or they may leave. Negative and uncivil behavior perpetuates the development of PPI and furthers the CCNs shortage (Moss et al., 2016). Although the CCNs shortage is multifactorial, PPI has contributed to either the turnover or the lack of CCNs at annual rates exceeding 25-60% (Moss et al., 2016). Mealer et al. (2014) asserted interventions to reduce CCNs' attrition were a high priority for nursing and health care leaders. Carlson et al. (2015) purports the critical care patient is subjected to a less caring environment, a higher risk of medical error, higher rates of hospital-acquired infections, and higher mortality potential due to a decreased CCNs workforce. In addition, less experienced CCNs may be left without the benefit of experienced nurse mentors due to the distracting cycle of PPI and/or attrition (Carlson et al, 2015). Professional relational communication is compromised and can result in patient harm (Carlson et al., 2015; Christie & Jones, 2014; France et al., 2011; Lowe, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

### **Purpose of the Project**

The purpose of the quantitative, cross-sectional, descriptive project was to ascertain what degree a relationship exists between the independent variable of CCNs' self-care and five dependent variables reflective of CCNs resilience: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. The targeted CCN population samples were recruited through a convenience electronic SurveyMonkey distribution and self-selection sampling method from a targeted audience of CCNs practicing in diverse adult critical care areas across the United States.

The DPI project introduced an innovative, web-based CCNs self-care intervention, and the administration of a descriptive survey pre- and post-assessment to determine relational association to the variables of CCNs resilience.

The concept introduced for quality improvement is CCNs' self-care awareness and self-efficacy in building or enhancing resilience. A web-based self-care and resilience intervention program, based on Hersch et al.'s (2016) web-based stress reduction program for nurses was developed and approved through a Grand Canyon University committee review (see Appendix B). CCNs self-care may have a positive impact on the CCNs' resilience and compassion satisfaction for critical care work. Extending self-care into the critical care environment through positive caring and professional behaviors may be emulated and disseminated into critical care environments through self-efficacy and peer-mentoring as another possible tool in the arsenal to combat the stress-related negative behaviors (reciprocal determinism) (Bandura, Blanchard, & Ritter, 1969; Bandura, 1977). It was the intention of the practice improvement project to approach the CCNs shortage crisis related to CCNs leaving critical care due to the deleterious effects of adverse stress and PPI through the lens of CCNs as wounded healers. The promotion of CCN self-care and other self-healing strategies to enhance CCN's resilience may be instrumental in creating healthier and safer critical care environments (Conti-O'Hare, 2002). CCNs cannot continue to be the caregivers and healers of others without a self-caring, self-compassion, and self-healing focus (Duarte et al., 2016; Jazaieri et al., 2013; Laschinger, Borgogni, Consiglio, & Read, 2015; Mills et al., 2015; Montes-Berges & Augusto-Landa, 2014).

### **Clinical Questions**

The two clinical PICOT questions were formulated to assess for relational associations between the interventions of self-care and CCNs resilience as reflected by CCNs' compassion

satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. Envisioned through a lens of positivity, the Nursilience CCNs self-care intervention also proposes CCNs' self-efficacy and advocacy for disseminating caring and professional behaviors through peer-mentoring as a facet of self-care. One can reasonably deduce that increasing CCNs' well-being and resilience would promote a healthier and safer critical care environment (Duarte et al., 2016; Padgett, 2013; Santos et al., 2016). Through advocacy and actively participating in peer-mentoring, each CCNs can be instrumental in enriching professional interrelationships with respectful communication and empathetic behaviors toward patients, their families, and colleagues, improving patient outcomes (Bandura et al., 1969; Bandura, 1977; France et al., 2013; Mealer et al., 2014; Padgett, 2013; Sacco, 2015).

Bandura's (1969, 1977) concept of reciprocal determinism supports the assessment for associative relations pertaining to CCNs' self-efficacy and advocacy for disseminating positive caring and compassionate behaviors through positive peer-mentoring approach. CCNs' self-care extended into the critical care environment further promotes CCNs' resilience and well-being (Cherry, 2016; Padgett, 2013; Petosa & Smith, 2014). Although quantitative methods represent statistical measurements and objective data, they are not typically adopted to explore the subjective meaning of human behavior. However, they do allow for seeking out correlations and relationships between variables to support inferences and generalizations about the phenomenon being studied (Bandura et al., 1969; Bandura, 1977; Christie & Jones, 2014; France et al., 2011; Mealer et al., 2014; Padgett, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

**R1:** For CCNs, can the implementation of an innovative, multimodal web-based self-care intervention have an associate relationship on resilience reflected by (a) compassion satisfaction,

(b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area over a two-week period?

**R2:** In CCNs, can self-care extend into the workplace and have an associate relationship on interprofessional relationships and professional quality of life?

### **Advancing Scientific Knowledge**

The predominance of the scientific knowledge reflected by the literature review relates to the causation of burnout, compassion fatigue, moral distress, secondary traumatic stress, PTSD, and other stress-related PPIs experienced by diverse clinical practice nurses (Hinderer et al., 2015; Johnson 2015; Kelly, Runge, & Spencer 2015; Mealer et al., 2012; Moss et al., 2016; Sheppard, 2015). A few articles explored concepts of resilience, mindfulness, compassion satisfaction, organizational structures and work environments, leadership, and relational communication (Duarte et al., 2016; Jazaieri et al., 2013; Laschinger, Borgogni, Consiglio, & Read, 2015; Mills et al., 2015; Montes-Berges & Augusto-Landa, 2014).

The literature contained a wealth of information on incivility, lateral violence and workplace violence, job dissatisfaction, and intention to leave a workplace or the nursing profession (Christie & Jones, 2014; Maslach & Jackson, 1981; Mealer et al., 2012; Mealer et al., 2014; Rushton et al., 2015; Zerubavel & Wright, 2012). The literature offered very few empirical research articles that discussed potential interventions to address the stress-related psychological disorders. the importance of nurse self-care and self-compassion or nurse-to-nurse relationships and peer-mentoring (Arch, Landy, & Brown, 2016; Beaumont & Hollans-Martin, 2016; Craigie et al., 2016; Hersch et al., 2016; Jazaieri et al., 2013, Padgett, 2013). The literature offered very few empirical research articles that discussed potential interventions to address the stress-related psychological disorders (Hersch et al., 2016; Jazaieri et al., 2013; Mealer et al., 2014; Moss et



al., 2016). No large randomized controlled trials are available that examined interventional strategies to prevent or treat burnout or stress-related psychological symptoms in critical care health care providers (Carlson et al., 2015; Consiglio, 2014; Duarte et al., 2016; Jazaieri et al., 2013; Laschinger, Borgogni, Consiglio, & Read, 2015; Mantler et al., 2015; Mealer et al., 2014; Moss et al., 2016; Saltzberg & Clark, 2015).

The findings of the rather marginal practice improvement project will optimistically add to the current literature and nursing science knowledge. The expansion of nursing research is needed to explore the actual implementation of theoretical or evidence-based interventions and their outcomes. CCNs' self-care was proposed as an intervention to enhance resilience through self-efficacy for positive nurturing behaviors and peer-mentoring. Hypothetically, the positive and nurturing behaviors may play a role in increasing CCNs' compassion satisfaction and could promote healthier interprofessional relationships. Positive interprofessional relationships and relational communication support healthier, safer critical care environments, with improved critical patient outcomes. CCNs' resilience and compassion satisfaction are also associated with CCNs' retention in the critical care specialty area.

The thematic framework of various theories underpins the proposition for CCNs' self-care and self-efficacy to positively affect resilience and CCNs' retention. The theories include Conti O'Hare's (2002), Christie and Jones (2014) application of nurse as wounded healer theory, in fusion with Taormina's (2015) adult personal resilience theory. The synergistic constructs of the theories reflect the self-healing of the walking wounded and the transformation through CCN's transcendence to the wounded healer. The CCN as wounded healer is more resilient and advocates for the peer-mentoring of positive caring and nurturing behaviors in nurse-to-patient/family, nurse-to-nurse, and critical care professional interrelations. Positive interrelations

reflect Bandura's social learning (1969) and self-efficacy (1977) theories to explicitly regenerate a positive social and working CCNs' environment. In accordance with the phenomenon of reciprocal determinism, the individual will often assume the behaviors to which they are exposed. By following Bandura's social learning theories, the negative behaviors will be replaced with positive behaviors in the workplace, and reciprocal determinism will be reset to a positive contagion effect (Dahl, 2015).

If CCNs' well-being and critical care environments can be influenced by such interventions, it serves to reason that improved CCNs compassion satisfaction would improve CCNs retention in the critical care specialty areas, and by extension positively impact the global CCNs shortage crisis. All stakeholders must be involved to be accountable, to advocate, and to support the initiatives to improve CCNs' critical care work and their environment, starting with the CCNs themselves (Duarte et al., 2016; France et al., 2011; Hegney et al., 2014; Laschinger & Fida, 2014; Laschinger et al., 2015). The Nursilience DPI CCN self-care improvement project was developed in recognition of the scientific gap for the lack of the actual implementation of therapeutic interventions to enhance CCN's coping with critical care work and the adverse stress of their environment and retention. The development of the self-care intervention was based on Hersch et al.'s (2016) web-based stress reduction program. The Nursilience modules and resources were directed at the many facets of self-care and the CCN's worldview. CCN's self-care awareness and practice in all dimensions of the CCN's life was proposed as a therapeutic multifocal intervention. A pre- and post- Likert-style descriptive survey was administered to the target CCNs across the United States to assess for associative relationships to CCNs' resilience and retention. CCNs' resilience was measured by associated characteristics or variables of resilience that included: compassion satisfaction, interprofessional relationships, professional

quality of life, PPI, or intention to leave the critical care environment. CCNs with PPI and intention to leave the critical care environment pose a significant problem with critical care patients' safety, quality of care, and outcomes. CCNs with stress-related psychological and psychosocial impairment may exhibit symptomology for depersonalization, inability to give empathetic and compassionate care to themselves, their patients, patients' families, and others. Interpersonal, interprofessional, and relational communications are all negatively affected by CCNs with symptomatic PPI. Dysfunctional interpersonal relationships and communications have been associated with higher medical error occurrences, hospital-acquired patient complications, and substandard patient outcomes (Hoffmeyer, 2013; Moore et al., 2013; Purpora & Blegen; 2015; Slatore et al., 2012).

### **Significance of the Project**

CCNs experience a higher susceptibility for the development of stress-related PPI, a primary cause of CCNs attrition due to ineffective coping mechanisms and the detrimental effects of unrelenting high-intensity stress (Mealer et al., 2012; Mealer et al., 2014; Moss et al., 2016; Rushton et al., 2015). The consequential global CCN shortage, negatively impacts the quality of care for the most critically ill patients. Empirical research has been predominantly directed to the causation of the psychological disorders and negative behaviors associated with critical care nursing and the high CCNs' attrition rates. The interventions to address these critical issues have not been researched sufficiently. However, researchers have reported higher levels of resilience tend to increase coping skills and adaptation to the adverse stress levels experienced by CCNs (Mealer et al., 2014; Rushton et al., 2015; Taormina, 2015).

The identified problem of CCNs' PPI and attrition is multifactorial and will require multifocal and multimodal interventions. Resilience can be learned with self-care and

mindfulness interventions (Grafton, Gillespie, & Henderson, 2010; Hatler & Sturgeon, 2013; Leppin et al., 2014; Lowe, 2013; Mealer et al., 2012; Mealer et al., 2014; Richards, 2014; Taormina, 2015). It has been postulated by Mealer et al. (2014) and Shiparski, Richards, and Nelson (2011) that increased self-care and self-compassion for CCNs may support higher levels of resilience. Christie and Jones (2014) suggested the potential to prevent PPI or heal the CCNs as walking wounded and to inspire transcendence to wounded healers may (a) decrease the pathological behaviors of incivility and workplace violence, (b) increase compassion satisfaction, and (c) positively impact CCNs' retention. As a facet of self-care, the extension of self-care into the critical care specialty area is posited as an adjunctive therapeutic intervention for the CCNs. CCNs' self-efficacy and advocacy of positive and professional behaviors in a peer-mentoring approach is reflective of self-efficacy and social learning theories to create healthier behaviors in the critical care work environments (Bandura et al., 1969; Bandura, 1977). Reciprocal determinism for positive nurse-to-nurse relationships based on respect and trust for others could potentially decrease the attrition of CCNs and improve the quality and safety of critical care patients and their outcomes (ANA, 2015; Duarte et al., 2016; France et al., 2011; Laschinger & Fida, 2014; Laschinger, Nosko, Wilk, & Finegan, 2014; Mills et al., 2015; Moore et al., 2013; Moss et al., 2016; Rushton, 2014; Sacco, 2015; Taormina, 2015).

CCNs need to be accountable and instrumental in health promotion for themselves and their patients. Nurse-to-nurse peer mentoring for ethical competence and respectful behaviors are critical to the creation and maintenance of caring work environments that are professional and free of incivility in relational communication, and promote safe patient care (ANA, 2015, Duarte, Pinot-Gouveia, & Cruz, 2016; France et al., 2011; Padgett, 2013; Ulrich et al., 2014). The exploration and implementation of innovative and strategic interventions are warranted in

reaching the goal (ANA, 2015, Duarte et al., 2016; Lowe, 2013; Moore et al., 2013; Moss et al., 2016; Sacco, 2015).

### **Rationale for Methodology**

The practice improvement project explores the efficacy of self-care as an intervention on CCNs resilience and coping abilities for stress. CCNs' resilience is being appraised by the associated traits of compassion satisfaction, existence or absence of PPI, perceived interprofessional relational communication between nurses and colleagues, and professional quality of life. A quantitative methodology was applicable to the studies' objective to determine if relationships existed between the independent variable of CCNs' self-care and CCNs' resilience as reflected by the associated dependent variables: compassion satisfaction, interprofessional relationships, professional quality of life, PPI (burnout, compassion fatigue, secondary traumatic syndrome, PTSD, incivility), or intent to leave the critical care specialty area. Quantitative methodology aligned with the selected data collection instruments used to examine the relationships between the independent and dependent variables, as well as the categorical variables of the project. Although nonexperimental, the selected, descriptive relational design focuses on understanding the nature or phenomenon of relationships between the specified variables.

The quantitative approach allowed for an efficient, cost-effective and timely approach that is focused to a systematic data collection process. The Likert-style descriptive survey instruments were discriminately selected for data collection, measurement, and analysis of associate relationships of variables specific to the project and the targeted CCNs population.

Qualitative research or a mixed-method design would also be appropriate for the project. However, with time constraints and efficiency considerations, the quantitative method was more

suitable. Additional research with one or both methods may add a richer understanding of the theoretical framework and give additional humanistic meaning.

Predictive or postulated results relative to the clinical questions and assumptive propositions based on the existing literature would support the concepts of self-care as a therapeutic intervention. Self-care is anticipated to have a positive effect on enhancing CCNs' resilience and improving coping and adaptation to adverse stress. Higher levels of compassion satisfaction are postulated to have a reciprocal relationship to enhance resilience, whereas the development of PPI or intent to leave the critical care specialty would have an inverse relationship. As a facet of self-care, the CCNs may seek positive, respectful and professional behaviors in the work environment to reduce stress and support a healthier work life balance. In a peer-mentored approach, CCNs' self-efficacy and advocacy may have a positive impact on interprofessional relationships and relational communications. Respectful, professional behaviors and relational communications import a safer and healthier critical care environment (Breau & Rheume, 2014; Christie & Jones, 2014; Consiglio, 2014; Dahl, 2015; France et al., 2011; Sacco et al., 2016). For CCNs to improve their work and environment, it is essential for each one to be accountable as a role model, to uphold their professional code of ethics, and to participate in professional activism (AACN, 2006; AACN, 2016; ANA, 2015; Saltzberg & Clark, 2015).

### **Nature of the Project Design**

The quantitative cross-sectional method lends itself to a focused sampling of the targeted CCNs population from multiple and diverse adult critical care areas across the United States. A relational, descriptive design was selected as the most suitable approach to answer the research questions and to assess the project's propositions. The quantitative methodology was used to guide the project objective to ascertain associative relationships between the independent

variable of CCNs' self-care (moderator) and CCNs' resilience. Resilience in the project is reflected by the associated dependent variables of compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. In addition, there is an assessment for the efficacy of an innovational, web-based multimodal self-care intervention on CCNs' interpersonal and relational communication in the workplace. The selected quantitative, descriptive, and relational design afforded the appraisal of emerging interrelationships and inferences between multiple categorical variables. Measurement through descriptive survey instruments was utilized to determine any associated relational variables.

CCNs recruitment commenced after the Grand Canyon University (GCU) Institutional Review Board (IRB) Committee approval was obtained. The Belmont guidelines for human participants and informed consent were followed. The volunteer CCN participants were recruited from diverse adult critical care units that included medical, surgical, open-heart, neurological, thoracic, or other adult critical care areas through an electronic SurveyMonkey national distribution collector broadcast. The demographics collected from the volunteer participants for the project included the CCN's age, gender, ethnicity (optional), marital status, level of nursing academic education, years of critical care practice experience, shift worked, and the number of years in the current critical care unit.

A simple descriptive analysis was utilized to determine associative relationships between CCNs' resilience as reflected by compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. The influence of the self-care intervention on interprofessional relationships and relational communication was also tested utilizing the same survey pre-intervention for baseline measurements and post-intervention for a comparative assessment of variables. Categorical variables of age, gender,

marital status, shift worked, ethnicity (optional), level of nursing education, time spent in specific critical care unit, and years of critical care experience were assessed for trending. Measurement through a standard Likert-style descriptive survey instrument was utilized on collected data to determine statistical significance of associative relationships of the project variables. The Likert-style scale provides a strategy for quantifying data and allays subjective interpretation by the audience. A data set contributing to a well-defined, objective, and measurable reflection of how relationships are inferred, was constructed with the aim of purposing the results toward problem solving rather than to humanistic phenomenological meaning. Data analysis through statistical methods that give inference of numerical results can draw out additional hypotheses through deductive reasoning that contributes to the advancement of scientific knowledge (Melynck & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014).

Data collection and statistical measurements were achieved through the Nursilience survey results exported to SPSS. An evaluation for associative relationships of the project variables was performed. CCNs' self-care was the intervention, and the independent variable. The CCNs' resilience and coping capabilities were extrapolated from the descriptive Likert-style statements and self-assessments correlated to the project's dependent variables. CCNs self-reported for self-care, compassion satisfaction, and well-being that were related to the presence or absence of PPI symptomology. The symptoms included emotional exhaustion, depersonalization, desensitization, constant fatigue, reduced sense of personal achievement, cynicism, decreased empathy, negativity, and a numbing of feelings pervading all aspects of the individuals' personal and professional work life. The Nursilience survey also collected CCNs' responses for the critical care environment, stressors, incivility, supportive resources, and overall satisfaction with work-life balance, compassion satisfaction, or intent to leave the critical care



specialty area. The Nursilience descriptive survey consisted of 49 questions in a Likert-style survey format with statements applicable to the intent of the clinical research questions and hypotheses. An electronic survey instrument was developed specific to the practice improvement project in SurveyMonkey by partitioning relevant and tested surveys extracted from public domains (see Appendix A). The selected research instruments for the collection of data to answer the clinical questions were incorporated into one digital survey instrument. A project information and survey consent form was embedded in the first page of the survey to inform each prospective participant (see Appendix G).

The innovative, web-based multimodal self-care intervention program, titled ‘*Nursilience*’ (with website <https://sites.google.com/site/nursiliency/home>) allowed participants to interact with eight modules and resources on the website over a two-week period (see Appendix B). The program was self-paced and designed to NOT add to CCNs’ stress. The Google website was accessed only by consenting participants that received the link on completion of the pre self-care intervention Nursilience survey. At the end of the two-week period, the survey was repeated to correlate CCNs’ survey results pre- and post-intervention. The web-based innovative multimodal self-care intervention program followed a similar framework as the Hersch et al. (2016) trial web-based stress management program for nurses. Although there have been stress management programs offered in a classroom setting, the fluctuating schedules of CCNs with shift work and work-life balance, CCNs’ attendance becomes challenging and can actually add to their stress. In today’s high technology society, a web-based program was deemed to be more suitable and cost-effective for the targeted population to actively participate at times more favorable for them. The lessons were separated into eight modules, one each devoted to various facets of self-care, The CCNs were not directed to follow

any specific order and could individually select and interact as desired. The Nursilience Self-Care Resilience Interventional Curriculum is provided (see Appendix B).

Although the program was designed after the Hersch et al. (2016) web-based model, many additional resources were on the website. Resources were made available for the CCNs to explore the many facets of self-care as per personal preferences, and to self-focus 10-30 minutes a day or more on self-care. Links to videos, useful web-links, calming music for meditation or just quiet time, mindfulness exercises, areas of healing inspiration, spirituality, humor, and a reading library were provided. The Nursilience program was designed towards encouraging the CCNs to gain awareness and mindfulness for “me” time and to learn to be introspective and reflective of their feelings. The Nursilience program offered the CCNs’ self-exploration of the many facets of self-care for nurturing their inner self.

### **Definition of Terms**

For clarification purposes and to assist reader comprehension, this section provides definitions of terms utilized in this DNP DPI project:

**Altruism.** Stems from the early 19<sup>th</sup> century nursing as a reflection of kindness, willingness and desire of a nurse, or “calling of God” to serve and care for others without respect to self (Tuckett, 2015).

**Burnout or burnout syndrome (BO).** A work-related mental (psychological) impairment comprised from three dimensions: emotional exhaustion, depersonalization, and decreased personal accomplishment (Montgomery, Spanu, Baban, & Panagopoulou, 2015; Rouxel, Michinov, & Dodeler, 2016).

**Compassion.** A complex and multifaceted construct derived from four key elements: (a) awareness of suffering (cognitive), (b) sympathetic concern and emotional response to suffering

(affective), (c) a desire to see the alleviation of suffering (intentional), and (d) a responsiveness or willingness to assist in relieving the suffering (motivational) (Jazaieri et al., 2013).

**Compassion cultivation.** A self- or other-focused (mindfulness) compassion training to reduce fear of compassion of oneself and/or others and, being the recipient of compassion, enhances self-compassion (Jazaieri et al., 2013).

**Compassion fatigue (CF).** Often referred to as the cost of caring; the gradual reduction in compassion due to a cumulative and steadfast desire to care for others through their suffering (Moss et al., 2016). Compassion fatigue has been expressed as weariness of the soul by Charlescraft, Tartaglia, Dodd-McCue, and Barker (2010) in association with the psychological trauma of caring for patients.

**Compassion satisfaction (CS).** The positive, personal emotional aspect gained by caring that aids in balancing out the negative aspects of caring for the acutely ill. Compassion satisfaction mitigates compassion fatigue and is considered a protective mechanism from the capacity to receive gratification from care giving (Hunsaker, Chen, Maughan, & Heaston, 2015).

**Emotional or stress contagion effect.** The concept of emotion or stress can be spread throughout a social network, positive or negative social effect (Dahl, 2015).

**Coping mechanisms.** Strategies individuals use in order to tolerate and adapt to stressful situations. Cognitive appraisal or the evaluation of what an individual can do to shield the individual from harm. The cognitive and behavioral effort one employs to achieve resilience to harmful external or internal stressors (Lee, Kuo, Chien, & Wang, 2016).

**Cynicism.** A negative attitude derived from a lack of trust in a situation or organization that is expressed through frustration, pessimism, and contempt toward the entity; a subsequent

reduced work effort and productivity, strongly correlated with an intention to leave (Mantler et al., 2015).

**Critical care nurse (CCN).** Advanced practice registered nurse that specializes in the care of the critically ill and the human responses to life-threatening health problems. An advanced nursing practice specialty in nursing that requires intense and vigilant care for the most vulnerable and critically ill patients (AACN, 2016).

**Depersonalization.** One of three hallmarks of burnout, the distancing, or an attitude of indifference toward work that presents as behaviors of negativity, callousness, and cynicism. Depersonalization exhibits as impersonal manners and unprofessional interrelations with patients and colleagues (Moss et al., 2016).

**Disruptive behaviors.** Uncivil verbal or nonverbal behaviors such as eye-rolling, sarcastic remarks on one spectrum, and threatening behaviors including intimidation and physical violence on the opposite spectrum (Trossman, 2014).

**Emotional dissonance.** The discrepancy between the actual emotions one feels and the emotions displayed. Reflects the feelings a nurse may feel and contradicts the feelings they present as appropriate to the situation and environment. The regulation of emotions involves psychological effort and self-constraint that taxes emotional resources (Consiglio, 2014; Moss et al., 2016).

**Emotional exhaustion.** Depleted emotional reserves of a nurse or caregiver derived from caring for a patient or patients with poor prognosis for recovery or survival. Emotional exhaustion is one of the three hallmarks of burnout (Consiglio, 2014). **Empathy.** A complex socio-emotional capability for having an idea of the other person's thoughts, feelings and

motives that requires the differentiation between one's own feelings and another's emotional state (Duarte et al., 2016).

**Horizontal/lateral violence.** A pattern of workplace conflict that is directed at individuals on the same level or rank of employment over a period of time with repetitive episodes of emotional, psychological, physical, or sexual abuse. The intentional behavior to overtly and determinedly degrade, humiliates, or devalues the victim's stature, resulting in social exclusion and marginalization in the workplace (Rainford, Wood, McMullen, & Philipsen, 2015).

**Incivility.** The lack of respect for others, exhibits rude and offensive or condescending behaviors that is inconsiderate and psychologically damaging to others (Lachman, 2015).

**Interpersonal strain at work.** Recently proposed by Consiglio (2014) as a new facet to burnout, interpersonal strain is associated with emotional dissonance and the individual not being able to express their true emotional response, but one that is acceptable. It reflects feelings of personal discomfort and disengagement in interrelationships with others at work due to overwhelming social and emotional pressures in the workplace.

**Mindfulness.** The focused attention or awareness of one's own feelings in the present moment, a self-focusing, and nonjudgmental awareness exercise (*Merriam Webster Online Dictionary*, 2016).

**Moral distress (MD).** A psychological disequilibrium derived from the recognition of the appropriate ethical action to take but with the inability to act on, due to the constraints of the locus of powers in a health care structure (De Villers & De Von, 2012).

**Neuroscience of stress.** Psychological stress increases the risk for pathophysiological changes in the human body. Long-term stress-induced activation of the sympathetic nervous

system (SNS) may influence an inflammatory response that is a key contributor to stress-related physiological health changes (Muscatell & Eisenberger, 2012).

**Peer-mentoring.** The social support and networking between individuals that share a generation or position in society or employment. Peer mentoring builds and strengthens social networks in the provision of emotional information; appraisal encourages a sense of psychological safety and a higher motivation for behavior change (Petosa & Smith, 2014).

**Post-traumatic stress disorder (PTSD).** A psychological disorder, results from the direct or indirect exposure of a traumatic event that elicits feelings of fear, helplessness, or horror. The individual may re-experience the traumatic event, exhibit avoidance for reminders of the event, and show hyper-arousal symptoms. PTSD as it applies to the nursing population within a nursing theoretical lens and traumatization in the course of nurse work (Mealer & Jones, 2013).

**Professional quality of life.** The effective management of one's responses to high stress and the work demands they are experiencing; essential to the degree of work satisfaction, engagement, and emotional well-being (Craigie et al., 2016).

**Psychological and psychosocial impairment (PPI).** Various stress-related disorders encompassing BO, CF, MD, STS and PTSD.

**Reciprocal determinism.** Bandura's (1977) social learning theory acknowledged the mutual relationship that exists between three domains: environment, person, and behavior. Behavior is influenced by the social interactions and personal interplay of the three domains.

**Reduced personal accomplishment.** A hallmark of burnout, involving the questioning of self-worth or the ability to perform a role; a generalized devaluation of one's professional self-esteem (Moss et al., 2016).

**Relational communications.** Interpersonal contact exchanges with others (Duarte et al. 2016).

**Resilience.** A complex construct, reflects the phenomena of interplay between individual traits, social contexts, the nature of adverse stressors, and the capacity to endure and adapt to traumatic stress. Resilience presents the level of coping and adaptability an individual has to adverse stressors. Personal time focused on care for oneself to build or preserve one's own health or wellness. Personal practice that is intentional to meet psychological and physiological needs and to progress onwards to specific health goals (Taormina, 2015).

**Secondary traumatic stress syndrome (STS).** The development of psychological symptoms similar to PTSD, STS is often due to the exposure to traumatic emotional stress and experiencing a feeling of helplessness (Hinderer et al., 2014).

**Self-compassion.** An engaging and positive self-attitude directed at eliciting caring and kindness towards oneself. A self-awareness and comprehension of oneself that is absent of judgment towards perceived inadequacies and failures and follows the common faults of humanity and the human condition, rather than the over-identification with shortcomings. Self-compassion is comprised of three components: self-kindness, common humanity, and mindfulness to promote personal well-being (Yang, Zhang, & Kou, 2016).

**Self-efficacy.** Concept that indicates an individual is capable of achieving a goal through self-direction. The intrinsic motivation an individual possesses to attain a desired goal (Cherry, 2016). May be an innate trait, but can be developed (Lowe, 2013).

**Stress.** A subjective response to physical, emotional, and psychological demands, may be viewed as unpleasant or threatening (Kelly, Runge, & Spencer, 2015).

**Stress reduction modalities.** Interventions designed to aid individuals to more effectively cope with stressors (Duarte et al., 2016).

**Transcendence.** The concept of making personal progress in exceeding previous achievements and extending beyond personal capacity for physical, mental, and spiritual dimensions (Christie & Jones, 2014).

### **Assumptions, Limitations, Delimitations**

**Assumptions.** The first assumption of the DNP DPI project embraces the idea that CCNs who practice self-care and self-compassion would improve their resilience and capability to cope and adapt to the adverse stress of critical care nursing and their environment. Another assumption is that with improved resilience there would be enhanced compassion satisfaction, interprofessional relationships, and professional quality of life, resulting in a decreased predisposition to PPI or the intent to leave the critical care specialty area. There is also an assumption that CCNs that embraced self-efficacy and advocated for positive and nurturing nurse-to-nurse relationships through peer mentoring can promote a healthier and safer critical care environment.

**Limitations.** The data collection process presents as a limitation due to the self-selection sampling method, CCNs self-reporting, and the specifically designed descriptive survey for this project. The targeted CCNs population sample was dependent on volunteerism. The self-care intervention project was also limited by self-selection. Disadvantages of self-sampling are self-selection bias. The decision to participate reflects an inherent bias in the participant's characteristics/traits that could lead to a sample that is not representative of the population (Laerd Dissertation [Laird], 2012).



**Delimitations.** Advantages of self-sampling include the reduction in time necessary to obtain appropriate participants for a sample. This is represented by the CCNs targeted sample, as the participants may be more committed to participating in the project. Also they may provide more insight in the phenomenon being studied (Laerd, 2012).

### **Summary and Organization of the Remainder of the Project**

Critical care of the critically ill patients and their families is highly stressful to CCNs and critical care HCPs. The increased prevalence of burnout and other stress-related PPIs has generated a global shortage of CCNs in the workforce. Expansive research has been done on the causative factors for burnout, other stress-related PPIs, and potential interventions to mitigate the deleterious effects of adverse stressors in the critical care environment, or to enhance CCNs' resilience. However, there has not been significant research for the actual implementation and efficacy of possible therapeutic interventions (AACN, 2016; Moss et al., 2016).

The implemented, quantitative, descriptive, and relational designed practice improvement project was aimed at the pre- and post-evaluation of a web-based innovative self-care intervention and its efficacy. The self-care intervention project was based on a modification of the web-based Hersch et al. (2016) stress management program for nurses (see Appendix B). The Hersch et al. study was directed towards managing a myriad of stressors that impact nurses' work life. Hersch et al. asserted nurses' perception of stress is reliant upon the nurses' individualized characteristics, resiliency, and coping capabilities. The study results provided evidence for the benefits of a web-based program delivery and a perceived improvement in nursing related stress. The practice improvement project focuses on CCNs' self-care as a moderator to determine any associative statistical relationship to CCNs' resilience. CCNs' resilience is reflective of associated dependent variables of CCNs' compassion satisfaction,

interprofessional relationships, professional quality of life, PPI, or the intent to leave the critical care specialty area. Following the theory of nurse as wounded healer, the CCNs would model positive professional caring and respectful relational communications for healthier and safer critical care environments. The measures would be done through transcendence and role modeled servant leadership. These paradigms are supported by research reviewed in Chapter 2.

Chapter 2 includes a comprehensive literature review of the current empirical nurse science knowledge on topics of PPI (i.e. moral distress, compassion fatigue, burnout, secondary traumatic stress, PTSD, and incivility), self-care, self-compassion, compassion satisfaction, resilience, and potential interventions to address the identified CCNs' PPI problem that is perpetuating the global CCNs shortage crisis. Chapter 3 describes the quantitative methodology and project design, as well as the data collection and analytical methods. Chapter 4 provides both a written and a graphic presentation of the outcome results from the analyzed data and a summary of the results. Chapter 5 presents an interpretative discussion of the project results and relevance to the existing research knowledge. The timeline for the execution of the practice improvement project followed the GCU Direct Practice Improvement (DPI) milestones to be completed within the delineated time period.

## **Chapter 2: Literature Review**

Critical care nursing is a specialty that is in crisis (Mealer et al., 2014; Merlani et al., 2011; Moss, et al., 2016). The critical care nurse shortage is pandemic, and it has garnered international attention (Mealer, et al., 2012; Myhren, Ekeberg, & Stokland, 2013; Rushton et al., 2015). Evidence has shown the high turnover and poor retention of critical care nurses to be a multifaceted problem (Christie & Jones, 2014; Hinderer et al., 2014; Mealer et al., 2012; Moore et al., 2013; O'Brien, 2011; Walrafen et al., 2012; Zerubavel & Wright, 2012).

The CCNs left at the bedside often co-exist as impaired practitioners due to stress-related psychological disorders (Christie & Jones, 2014). Conti-O'Hare (2002) described these emotionally impaired nurses as the walking wounded. The resulting symptoms of a decades old problem have had an even greater prevalence in current times. Nurse-to-nurse interactions that are negative and demeaning may be the cultural norm of many clinical areas including critical care units. New nurses according to Christie and Jones may be exposed to incivility or experience traumatic hazing behaviors. Without therapeutic intervention, new nurses subjected to these behaviors may leave the critical care specialty or even the profession, further contributing to the critical care nurse shortage. Alternatively, they may be mentored into incivility and perpetuate the problem (ANA, 2015; Breau & Rheume, 2014; Walrafen et al., 2012).

Interventions to reduce CCNs' attrition are a high priority for nursing and health care leaders. The critical care patient is subjected to a less caring environment, a higher risk of medical error, higher rates of hospital-acquired infections, and higher mortality potential due to a decreased CCNs workforce and less experienced CCNs without the benefit of experienced nurse mentors due to PPI or attrition. Professional communication is negatively affected and can result in

patient harm (Christie & Jones, 2014; France et al., 2011; Lowe, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

It is not known if and to what extent CCNs' resiliency is affected by self-care. Also, it is not known if this resiliency is associated with CCNs' compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. Additionally, it is not known how psychologically impaired nurse-to-nurse relationships may have influenced this global problem and may continue to hinder recruitment and retention of new nurses to the critical care specialty, or the scope of impact on patient outcomes. The purpose of the quantitative, cross-sectional, descriptive project was to ascertain what degree a relationship exists between the independent variable of CCNs' self-care and five dependent variables reflective of CCNs' resilience: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. In addition an assessment of the efficacy of an implemented web-based, self-care interventional Nursilience program was performed. The innovative multimodal web-based self-care intervention program was specifically developed for the direct practice improvement project.

A literature review was conducted primarily through the Grand Canyon University library resources for background, theoretical foundations and key themes, on CINAHL Complete, Cochrane, Medline, OVID and ProQuest databases. These key words were utilized in the search: critical care nursing, burnout, stress, psychological factors, moral distress, PTSD, resilience, coping, retention, compassion fatigue, nurse-to-nurse relationships, peer mentoring, mindfulness, and compassion satisfaction. A number of key themes and subthemes relative to the problem statement and PICOT questions emerged.

The literature review presents the background derived from the literature search and defined sections of the key themes and subthemes. The first section discusses the higher prevalence of burnout, moral distress, and compassion fatigue in critical care nursing, the critical care work environment, and the impact on CCNs retention. The second section delves into incivility, bullying, and workplace violence significance and impact on CCNs' burnout, safe patient care, and CCNs' recruitment and retention. Section three provides a glimpse into the phenomena of resilience and compassion satisfaction and how they relate to decreased burnout and healthier adaptation to adversity and coping with cumulative stress. Section four covers self-care, self-efficacy for mindfulness and self-compassion in building resilience, prevention of PPI, and self-healing. Section five presents the elements of resonant leadership, psychological capital, and organizational structuring for the empowerment and support of caring, healing, and safe critical care practice environments. Section six encompasses the interventional strategies for building resilience and improving nurse-to-nurse relationships. Peer support as a moderator is posited by Seo, Kim, and Park (2014) to have a positive impact on CCNs' compassion satisfaction. Compassion satisfaction is an integral component of CCNs' healing and transformation to higher dimensions of self-actualization, and transcendence to wounded healers to extend compassion, caring, and healing to others (Christie & Jones, 2014; France et al., 2011; Padgett, 2013).

The conceptual framework of this DPI project was derived from the fusion of three theories. These theories are the nurse as wounded healer theory by Conti O'Hare (2002), the adult personal resilience theory by Taormina (2015), and Bandura's social learning (1977) and self-efficacy (1969) theories. Christie and Jones (2014) and Zerubavel and Wright (2012) proposed the application of Conti-O'Hare's (2002) nurse as wounded healer theory to address

lateral violence in nursing. Six studies were reviewed and compared for empirical research to support the practice improvement project through qualitative assessment by comparing, contrasting, and synthesizing what the research conveyed. A cumulative summary is included.

### **Background to the Problem: CCN Resilience**

CCNs are immersed in the traumatic illnesses and suffering of their patients and the associated vicarious emotional stress of their families and significant others (Hinderer et al., 2014). If the CCNs do not possess sufficient resilience and coping skills, the cumulated stress and trauma may overwhelm them (Mealer et al, 2014; Christie & Jones, 2014). Burnout, compassion fatigue, moral distress, secondary traumatic stress, PTSD, and decreased compassion satisfaction have been researched expansively, and evidence shows they are the leading causes for CCNs to leave the specialty and possibly the nursing profession (Christie & Jones, 2014; Hinderer et al., 2014; Mealer et al., 2012; Merlani, 2011; Moss et al., 2016; O'Brien, 2011; Rushton et al., 2015).

**Burnout, moral distress and compassion fatigue.** A CCN's worldview is often challenged with controversial or ethical situations in caring for the acutely ill and end-of-life decisions (Brown, 2015; Consiglio, 2014; De Villers & De Von, 2010; Lawrence, 2011; McCue, 2012; Shoorideh et al., 2015). The discrepancy between the demands and the CCN's emotional reserves in the attempt to maintain an alignment of personal and professional values may disrupt the meaning of the CCN's professional identity and psychological well-being causing moral distress (Consiglio, 2014). Moral distress has a high association with burnout and compassion fatigue (Brown, 2015). According to Rushton et al. (2015), burnout often presents with emotional exhaustion, the CCN experiences a reduced compassion satisfaction or lacks a sense of personal accomplishment, and may exhibit depersonalization (Hinderer et al., 2014; Lee, Kuo,

Chien, & Wang, 2016; Maslach & Jackson, 1981). Depersonalization may be displayed as the distancing of emotions with decreased empathy and caring behaviors for one's self and others. Depersonalization may contribute to the dysfunctional and negative relational communication that is often associated with incivility, or workplace violent behavior (Canadas-De la Fuente et al., 2015; Christie & Jones, 2014; Li, Guan, Chang, & Zhang, 2014; Moss, 2016; Zerubavel & Wright, 2012).

The Critical Care Societies Collaborative (CCSC) as presented by Moss et al. (2016) is a taskforce comprised of the AACN, the American College of Chest Physicians (CHEST), the American Thoracic Society, and the Society of Critical Care Medicine to address significant care issues in critical care. In recognition of the precipitous and deleterious increase in burnout syndrome in critical care HCPs, the CCSC issued a call for action to raise awareness to burnout syndrome. Based on the review of multiple studies, the CCSC reported an approximate 25% to 35% of CCNs manifest severe burnout symptoms, with a staggering 86% of CCNs possessing at least one out of the three classic symptoms: emotional exhaustion (73%), lack of personal accomplishment (60%), and depersonalization (48%). Moss et al. reported on the contention that critical care units with a negative work place culture potentially harbored a “contagion effect” among CCNs and other critical care HCPs.

**Ethics, incivility, and workplace violence.** Conflict and negative psychosocial behaviors have increased along with burnout in the critical care settings. The depersonalization aspect of burnout may manifest as negative, callous, and cynical behaviors. The incivility and disruptive behaviors known as lateral violence in the nursing profession have become a significant problem. The uncivil and immoral behaviors negatively impact relational communication, safe patient care and the recruitment and retention of CCNs (Christie & Jones,

2014; Consiglio, 2014; Conti-O'Hare, 2002; Lim & Bernstein, 2014; Rainford et al., 2015; Walrafen et al., 2012; Zerubavel & Wright, 2012).

Lachman (2015) recounted the The Joint Commission's (2008) sentinel alert directed at the disruptive behaviors of lateral violence, and the negative impact on patient's safety. The ANA (2015) issued a position statement for the accountability of nurses and the organizations that employed them to create ethical work environments and cultures based on civility and kindness, and to treat all colleagues, disciplines, staff, students, and others with dignity and respect. The ANA position statement also upheld that nurses must also be treated with respect and dignity.

**Resilience and compassion satisfaction.** Compassion satisfaction as related by Stamm (2010), and Johnson (2015), is the positive emotional aspect of caring derived by caregivers. Compassion satisfaction mitigates the risk of compassion fatigue as it bestows a sense of resiliency to the human spirit (Duarte et al., 2016; Jazaieri et al., 2013; Kelly et al., 2015). Resilience has been identified as a multifaceted construct that is correlated with an individual's determination and capacity to endure, adapt, and recover from adversity (Taormina, 2015). Mealer et al. (2014) observed CCNs with higher levels of resilience were able to adapt to and cope with the adverse complexities and stress of the critical care environment, and sustain compassion satisfaction with their clinical practice. Resilience may be taught through cognitive behavioral therapy for self-awareness, self-care, and mindfulness interventions to increase a nurse's ability to adapt and cope with stress and adversity, and to initiate a therapeutic recovery experience from psychological trauma (Grafton, Gillespie, & Henderson, 2010; Hatler & Sturgeon, 2013; Leppin, Gionfriddo, et al., 2014; Mealer et al., 2012; Mealer & Jones, 2013).



The thematic essence of the aspirations of Conti-O'Hare (2002), Christie and Jones (2014), and Zerubavel and Wright (2012) included two factors: the insight for self-healing to transform from the walking wounded to the wounded healer; to the transcendence to a higher service for the therapeutic care of others. These factors were necessary for the psychological healing of the wounded caregiver. Transcendence is the concept of making personal progress in exceeding previous achievements and extending beyond personal capacity for physical, mental, and spiritual dimensions.

The application of Conti-O'Hare's (2002) nurse as wounded healer theory was proposed by Christie and Jones (2014) to address lateral violence in nursing. Using the nurse as wounded healer theory, Christie and Jones associated the negative behaviors of nurses with the psychological insults or wounds that these nurses sustained from unresolved personal or professional life trauma. Christie and Jones and Zerubavel and Wright (2012) characterized these nurses with PPI as the walking wounded. By effectively working through the psychological trauma, the walking wounded go through a transformation of self-healing, and are able to transcend to a higher dimension as a servant healer of others, promulgating a positive impact on the health care system, society, and the nursing profession (Conti-O'Hare, n.d.; Padgett, 2013; Purpora & Blegen, 2015).

**Self-care, self-compassion, and resilience.** A CCN's high prevalence for developing PPI may be related to inattention to self-care. CCNs are immersed in the care of the acutely ill and must always be vigilant for signs of distress in their patients. This high vigilance and high stress draws upon the CCN's psychological and physiological reserves (Arch, Landy, & Brown, 2016). Self-sacrifice without self-care is a prescription for the development of emotional exhaustion and PPI. Remaining healthy through self-care in the physical and psychological realm

through stress management, wellness promotion, mindfulness for self-compassion, and work-life balance requires self-efficacy and commitment (Beaumont & Hollins Martin, 2016; Heard, Hartman, Beal, & Bushardt, 2014; Jazaieri et al., 2014; Kravits, McAllister-Black, Grant & Kirk, 2010; Richards, 2014; Shiparski, Richards, & Nelson, 2011; Yang, Zhang & Kou, 2016).

**Nurse-to-nurse relationships and peer-mentoring.** According to Moore et al. (2013), healthy nurse-to-nurse relationships are crucial to the health of the work environment, and nurses must be empowered to resolve conflicts amongst themselves and their colleagues. Furthermore, nurses need to understand how they interrelate has an impact on the patients they care for, the health care organization, and the nursing profession (France et al., 2011; Hoffmeyer, 2013; Lawrence, 2011; Padgett, 2013; Turner, 2014). Each nurse has the accountability to be a frontline advocate for embracing a new worldview, one of positivity for nurturing healthy professional relationships through self-efficacy and peer-mentoring to create safe and caring work environments (ANA, 2015; Moss et al., 2016).

Peer-mentoring for building collegial relationships towards the sustenance and maintenance of ethical competence and standards of professionalism may be part of the solution (France et al., 2011). Peer-mentoring is based on empowerment of each nurse to champion and model professionalism, respectfulness, and civility. Padgett (2013) reported the importance of peer relationships in nursing is vital for coordinating patient care through the shifts and transitions of care; ensuring quality and safety; and instituting and sustaining ethical competence for the professional standards of nursing. The adoption of collegiality as a framework for a peer-mentored interventional approach to uphold the accountability and expectation of professional behavior, professional regulation, and quality of care is a positive step towards nurturing nurse-to-nurse relationships for a culture of resilience and healing care (Mills et al., 2015; Moore et al.,

2013). A climate of collegiality at the unit level in nursing has been purported by Li et al. (2013) to reduce emotional exhaustion and depersonalization at nurse's individual levels.

**Interventional strategies.** Transforming health care is part of the DNP role by implementing evidence-based practices (Kendall-Gallagher & Breslin, 2013). Nurse empowerment and professional nursing support are indicative of safe, healthy, and caring nursing workplaces (Laschinger et al., 2015). Improved emotional intelligence, compassion satisfaction, and retention are all hallmarks of a healthy workplace (Montes-Berges & Augusto-Landa, 2014). Resonant leadership and organizational structural support for nursing well-being and an investment in psychological capital weld a significant influence on nurse satisfaction and retention (Laschinger, Cummings, et al., 2014). Meaningful recognition, compassion satisfaction, and resiliency may be afforded through compassion cultivation interventional training programs. Focused and constructive change through the intentional embracing of each nurse for positivity to displace the negativity and disruptive behaviors so prevalent in today's clinical practice and critical care units is needed. In a holistic and therapeutic approach, the power may be within each CCN, rather than external strategies that have proved impotent in addressing the problem of PPI and CCNs' attrition (Kelly et al., 2015; Rovinsky, 2014; Trossman, 2014; Turner, 2014). Establishing a zero tolerance for incivility and workplace violence as per the ANA (2015) position statement, fosters the expectation that every nurse is accountable and is a contributor to building healthier work environments, and a positive organizational culture. Nurturing peer-mentoring for nurse-to-nurse relationships intimates the synergistic transference for nurse-to-patient compassionate care (AACN, 2006; AACN, 2016; Padgett, 2013).

## **Theoretical Foundations and/or Conceptual Framework**

The middle-range theory of the nurse as a wounded healer proposed by Christie and Jones (2014), based on the former Conti-O'Hare (2002) theory of the nurse as wounded healer, serves as the central underpinning theoretical framework of this direct practice improvement project. The appropriateness of the nurse as wounded healer theory to the topic, and its harmony with Taormina's (2015) adult personal resilience theory meld together to construct a positive psychological approach to preventing and/or healing the psychologically and psychosocially impaired nurse. The CCN plagued with PPI moves from being the victim (wounded walking) to evincing a self-transformation through self-healing and spiritual transcendence to the wounded healer (Zerubavel & Wright, 2012).

Bandura's social learning theory (1977) and self-efficacy theory (1969) aptly portray the social behaviors of mentored incivility with the immersion of new nurses into workplace violence, as well as the adaptation to new and positive environments and self-efficacy to move beyond the negativity. In accordance with Bandura, Blanchard, and Ritter (1969), the immersion and reciprocal determinism of behavior may in itself present a solution to this long and well-documented problem of nurse-to-nurse incivility and workplace violence (Butts & Rich, 2015; Walrafen et al., 2012). Building on Bandura's concept that positivity and nurturing behaviors can also be emulated may prove to be one of the solutions to combat the negative behavior and answer the PICOT questions:

**R1:** For CCNs, can the implementation of an innovative multimodal web-based self-care intervention have an associate relationship on resilience reflected by (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area over a two-week period?

**R2:** In CCNs, can self-care extend into the workplace and have an associate relationship on interprofessional relationships and professional quality of life?

The direct improvement project introduced CCNs to self-care as a prospective therapeutic intervention to ameliorate the negative effects of stress, to enhance their coping capacity and adaptation to fluctuating levels of vicarious stress, and to inspire compassion satisfaction and retention. The theoretical framework selected for the practice improvement project is a fusion of the nurse as wounded healer theory of Conti O'Hara (2002) and Christie and Jones (2014) with Taormina's (2015) adult personal resilience theory. The resultant conceptual framework supports and represents the CCN's participation in self-care as an action towards self-healing and personal and professional growth. Characteristics projected to enable the CCN to improve their overall interpersonal and psychosocial interactions with others. A higher capacity for empathy, caring and compassion is derived from their own self-caring and enhanced compassion capacity and satisfaction. The walking wounded transform into the wounded healers as a result of their own self-actualization and become elevated to a higher level of awareness and transcendence to resonate their healing and caring compassion to others.

Bandura's theory of social change (1969) and theory for self-efficacy (1977, 1986) aptly exhibit the social behaviors of mentored incivility with the introduction and orientation of new nurses into workplace violence. The enhancement of self-efficacy and the capacity to move beyond the negativity to inspire positivity and resilience supports the creation of healthier and safer critical care workplaces. Following the concept of reciprocal determinism, each nurse can adopt the intentional change of social behaviors from negative to positive. Also, nurses can espouse enhanced moral decorum guided by the nurses' professional code of conduct and ethical standards, being peer-mentored as the norm (AACN, 2016).

**Nurse as wounded healer theory.** Professionals in the fields of psychiatry, psychotherapy, and religion apply the concept of the wounded healer. The origin of the wounded healer goes back over 2,500 years to Greek mythology and the archetype of the wounded healer, symbolizing healing powers as a result of a healer's own sustained wounds. The legend is told of Chiron, the centaur renowned for his kindness, who sustains an accidental injury from one of Heracles' poisonous arrows. Chiron did not die and could not die due to his immortality, but he would suffer eternally from the painful and incurable wound. Initially he retreated to his cave to suffer in solitary. However, Chiron moved past his own pain and entered Hades to heal others; this was his spiritual transformation and transcendence from the wounded to the wounded healer of others (Christie & Jones, 2014; Zerubavel & Wright, 2012).

The philosophical work of Jung (1953) expanded upon the basic assumptions that every person experiences trauma of some nature in their life. The existence of the conscious and unconscious aspects of the experience may coincide. Human behavior is driven by life experiences and must reconcile these coexisting experiential aspects as a whole. These aspects of the experience are to be viewed holistically in order to self-heal and attain transcendence as a healer of others (Christie & Jones, 2014; Zerubavel & Wright, 2012). Borrowing the concept of the wounded healer, Conti-O'Hare (2002) applied it to the nursing profession. Conti-O'Hare and Christie and Jones (2014), offered the wounded healer as a model pathway for nurses who are suffering from psychological pain, portrayed as the walking wounded. First, the nurse must recognize his or her own painful wounds in order to progress through the phases of healing. The therapeutic use of self-healing begins the process of transformation and transcendence for the nurse to become the wounded healer and for the nurse to self-actualize the highest therapeutic use of self towards healing others.

Christie and Jones (2014) recognized the stress-related trauma and psychological wounds of the nursing profession in crisis as displayed through the pathological behaviors of lateral violence. The psychologically and psychosocially impaired nurse's "*woundedness*" is projected on to others, often the most vulnerable of peers and new nurse graduates in need of mentoring (Zerubavel & Wright, 2012). These new nurses become the victims of their projected pain; if unable to cope and adapt in a resilient and healthy way, the new nurses may join the walking wounded in mentored incivility or leave the critical care unit or specialty, perpetuating the problem and prevalence of incivility and/or attrition and the critical CCNs shortage (Christie & Jones, 2014).

Within the theory premises of the nurse as wounded healer, Christie and Jones contend each nurse must self-reflect and attain self-awareness of their own anxieties and pain and must transform through self-healing towards the transcendence to a wounded healer of others. As nurses step onto the pathway of self-awareness and recognition of their wounds towards self-healing, they need to reflect upon some questions regarding their wounds:

Step 1. Study the questions below for self-awareness and recognition of own wounds:

- What happened?
- What could be changed?
- How should it have been handled?

Step 2. Work on transformation. Transform the pain into an acceptable and manageable understanding by asking these questions:

- What can be learned from the incident?
- Has this changed me or the people I care about?
- How can this be used to make things better?

Step 3. Transcendence only happens if the previous two steps have been successfully completed. Transcending the pain allows for insights and learning from past experiences that can be used to help others as they experience pain and suffering. At this point you can say to others:

- I understand your pain.
- How can I make things better for you?

Nurses must follow all three steps to transcend to a wounded healer and have the higher therapeutic actualization to empathize and extend their therapeutic healing to others, the nursing profession, and the health care environment (Conti O'Hare, 2002; Christie & Jones, 2014).

Zerubavel and Wright (2012) avowed the process for self-healing is a growth process that fosters resilience. We can create healing clinical environments and promote resilience by cultivating supportive responses through training clinical practitioners to identify the psychological impairments of the walking wounded, and to provide the support for their personal awareness and self-exploration for recovery and psychological well-being. It is crucial for CCNs to self-explore, gain self-awareness, and embrace the multifaceted aspects of self-care in order to realize the ultimate paradigm of self-compassion, higher resilience, post-traumatic growth, and servant healing as wounded healers for the highest therapeutic use of self. The higher resilience from post-traumatic growth is in synergy with Taormina's (2015) adult personal resilience theory (Zerubavel & Wright, 2012).

**Adult personal resilience theory.** A new theory presented by Taormina (2015) focuses on the adult's internal characteristics, and identifies four distinct dimensions for adult personal resilience. Personal resilience denotes the capability of a person to endure and to recover from adversity. When focusing on adult personal resilience, one must understand that resilience is an



internal construct that manifests throughout the lifespan of a person. Taormina presented four dimensions: determination, endurance, adaptability, and recoverability.

Taormina (2015) explained the four dimensions. Determination is the drive and resolve of purpose that a person possesses and the fortitude to persevere and be successful. It is a conscious or cognitive intrapersonal awareness of action despite previously incurred trauma. Endurance is the personal strength and fortitude an individual retains to tolerate abhorrent and difficult situations without succumbing to the adversity. Adaptability is the capacity a person has for being flexible and resourceful in coping with adverse and/or changing conditions within their environment. A cognitive and conscious awareness to change one's thinking and/or behavior to acclimate to the circumstances of the situation. Recoverability is the resiliency a person has to recover physiologically and psychologically from maltreatment, impairments, or disparity in order to revert back and resume one's normal status. There is a differentiation of recoverability versus recovery. Recoverability is a perceived characteristic of resilience to empower a person to recover, while recovery is the outcome. The cognitive component encompasses the positive interpersonal thoughts related to one's condition. An example would be to not perceive all stress as negative but to turn it into a positive. Personal resilience is intra-personal, and social support is a valued external factor that can facilitate personal recovery.

The relevance of Taormina's (2015) adult personal resilience theory to the current study follows the premise every adult can be perceived to possess a uniquely individual 'resilience profile' in correlation with the intrapersonal levels of low to high combinations of the four resilience components. A person may improve each or all of the four dimensions through self-awareness and self-efficacy for increasing their openness to learn and turn perceived obstacles into challenges, focusing on self-care, self-compassion, and wellness for improving personal

resilience. Personality variables such as personal integrity, emotional intelligence, or sociability provide a few examples of areas that can be supported by structural organizations for effective employee commitment and a reduction in attrition (Taormina, 2015).

**Bandura's social learning and self-efficacy theories.** Bandura developed the social learning theory in 1977 and expounded upon his theory in 1986 on the premise that behavior is learned by the imitation of the behavior of others and through vicarious experiences. The theory coincides with servant leadership or role modeling to achieve desirable social behaviors. The motivation is through active learning and positive affirmation or reinforcement of the desired social behavior. Bandura posited that motivation is a derivative of thought and the belief of self-efficacy (Bandura et al., 1969; Bandura, 1993). In application to this study, the nurses with the highest levels of self-efficacy will have high motivation and resilience to better cope with stress and gain a greater degree of compassion satisfaction. The CCN is shielded by compassion satisfaction from the development of PPI. Bandura's (1993) self-efficacy concept bridges the gap between behavioral theorists and cognitive theorists, as an individual's sense of self-efficacy is a maturation cultivated from actual accomplishment of a set goal. The sense of accomplishment positively effects the CCN's social interactions and personal perception of their capability or competency, which interrelates with the wounded healer and adult resilience theories for this direct improvement project.

## **Review of the Literature**

The literature review includes relevant topics and key themes for the framework, formulation, and implementation of the practice improvement project. The key themes and topics include the prevalence and many aspects of PPIs, primarily burnout, and the associated relationship of burnout with moral distress, compassion fatigue, secondary traumatic stress, and

PTSD that CCNs experience. Topics of resilience, compassion satisfaction, interventional strategies, and retention are also explored and discussed. The literature review is derived from multiple studies, whitepapers, dissertations, and peer-reviewed empirical research articles for nursing as a whole and for diverse specialties ranging from trauma units, pediatric intensive care units (ICUs), medical and surgical ICUs, emergency departments, oncology, hospice/palliative care, and renal dialysis nurses. In the first section, the literature is related to the increasing prevalence of stress-related PPI, the implications of PPI on nursing [CCNs] as a profession, and the implications on the critical shortage of CCNs.

**Prevalence and factors fostering nurse burnout.** The escalating prevalence of burnout in CCNs and HCPs is unprecedented and relates to the higher health care population and economic constraints in tandem with the challenge to provide high quality evidence-based care (Moss et al, 2016; Consiglio, 2014). Compliance with core standards impacts the reimbursement structure of health care reform (Li et al., 2014; Montgomery et al., 2015). In light of these complexities, Consiglio (2014) explored interpersonal strain at work, a new facet of burnout for acute care environments. Moss et al. (2016) discovered burnout to be a global phenomenon that has garnered vast attention as the world is recognizing the perilous shortage of HCPs, especially in the critical care health professions.

Initially, Consiglio (2014) historically reviewed burnout as being conceptualized as an HCP psychological disorder derived from emotionally charged patient interactions. Later Consiglio recognized burnout as a more generalized relational crisis with one's work and the depersonalization associated with the social and nonsocial work stressors, severing it from the patient-related stressors of the original concept. Depersonalization is a protective mechanism displayed as an impersonal and dehumanizing behavior to decrease emotional siphoning by the

denial of another individual's humanity and personal identity or by objectifying them (Maslach & Jackson, 1981).

**Interpersonal strain.** In a quantitative study, Consiglio (2014) explored the potential mediating role of interpersonal strain in relationship to emotional dissonance. Consiglio explained that emotional dissonance is a conflict of emotions experienced by the nurse in opposition to those required by the organization, resulting in burnout with two core dimensions: exhaustion and cynicism. Additionally, physiological health symptoms develop among hospital staff. A conservation of resources model (COR) framed the study, following the assumption people strive to preserve, protect, and construct defenses against threats of potential or actual loss of their valued resources. Results revealed a positive correlation of emotional dissonance with interpersonal strain, as well as with exhaustion and cynicism which are two core symptoms of burnout. Health care members consumed energy by suppressing or faking emotions in interpersonal interactions as in scripting or socially acceptable responses, often in conflict with the actual emotions the nurse was experiencing. The conflict and suppression of emotion draws negatively from the nurses' emotional energy reserve, resulting in exhaustion without motivation (cynicism) as a consequent negative and detached response activated towards social interactions in the workplace. Consiglio suggested that another possible causal factor of emotional dissonance related to health symptoms was due to the deterioration of relationships. Consiglio's suggestion supports the concept of interpersonal strain as social withdrawal and as a defensive coping mechanism towards the demanding interactions and overwhelming social pressures, internal and external, of the workplace that interfere with safe and collegial nursing practice and personal well-being (Bogogni, Consiglio Alessandri, & Schaufeli, 2012).

**Demands of nursing practice.** Using a model of job demands-resources (JD-R), Montgomery et al. (2015) tested the main and moderating effects of teamwork effectiveness for burnout relative to sharing the resources. Also, as part of this study, Li et al. (2014) performed a complex, multilevel, multivariate probit model with data extracted from a cross-sectional survey from the *RN4CAST* project. The *RN4CAST* project was an international research in Europe; the Center for Health Outcomes and Policy Research (CHOPR) served as the United States partner of the consortium. The aim of the study was to add to the existing knowledge for nursing workforce planning to provide actionable recommendations to improve the quality of nursing care and patient outcomes with a singular hospital level focus to inform global policy makers and providers on how to support and improve healthcare outcomes through investment in nursing (Penn, 2016). Li et al. explored the relationships between the nurse practice environment (managerial support for nursing, physician–nurse collegial relations, and promotion of quality care) and the dimensions of burnout (emotional exhaustion, depersonalization, and personal accomplishment). Conclusions indicated nurse work environment dynamics are related to nurse burnout at both the unit and the hospital levels. Results revealed the need with regard to a shared and integrated vision for the promotion of quality care that is in sync with the practicing health care members (Laschinger et al., 2015). Montgomery et al. (2015) similarly postulated that the feeling of sharing the workload would reduce feelings of exhaustion and depersonalization, two precursors of burnout. Job stressors are high and will continue to increase due to the health care climate. It is imperative that all stakeholders be involved in identifying individual, interpersonal, and organizational characteristics that can shield nurses from the deleterious effects of negative stressors and influence them to be at their highest individual potential. There are relatively few studies to evaluate the role of individual and unit-level resources that influence nurses' well-

being relative to the demands of nursing practice. The identified nursing science gap for the lack of individual and unit level intervention and resources to address this significant problem led to the Nursilience self-care intervention project. There is a critical need to explore and implement therapeutic interventions for nurses in practice in all settings, such as self-care, to mitigate the stress from interpersonal strain and burnout, and improve CCN capacity for resilience, self-healing, interprofessional interactions, professional quality of life, compassion satisfaction, and retention (Consiglio, 2014; Laschinger et al., 2014).

**Stress reduction intervention program.** The Nursilience self-care intervention project was based on a modification of the web-based Hersch et al. (2016) stress management program for nurses. The RCT study was conducted on 104 nurses in five Virginia and one New York hospitals and was titled *Breathe: Stress Management for Nurses*. Hersch et al. asserted nurses' perception of stress is reliant upon the nurses' individualized characteristics, resiliency, and coping capabilities. The program was web-based and directed towards managing a myriad of stressors that impact nurses' work life. The program included sections devoted to information on the impact of stress on the body, assessing and identifying stressors, modifying responses to stress, altering one's personal views of stress or stressful situations, taking time to reflect, destress, grieve, and promote effective communications skills. The study results provided evidence for the benefits of a web-based program delivery and a perceived improvement in nursing related stress. Hersch et al. emphasized the importance of interventions for improving collegial relationships as a stress reduction practice to influence individual growth, compassion satisfaction, and retention. The Nursilience self-care program modified the program for CCNs and was sectioned into eight modules (see Appendix B):

Module 1: Welcome and Introduction: Information of how stress impacts the neuroscience of stress and its physiological effects, and learning about the upside of stress. How one can make stress work for personal growth. The CCN will gain knowledge of how to transition stress into a positive for personal growth (McGonigal, 2015).

Module 2: Assess Your Stress: Taking a personal inventory through reflection and feedback for coping with personal stressors. The CCN will have the opportunity to assess their stress from many different perspectives through tool resources found at:

<http://faculty.weber.edu/molpi/healthclasses/110/bookchapters/selfassessmentchapter.htm>

May measure stress from a variety of perspectives including:

- Physiological indicators of stress
- Your perception of what is happening in your life
- Sources of stress and frequency of hassles
- Your level of satisfaction with events in your life
- Type of life events you have experienced

The CCN will have the information to develop a personal plan to help reduce stress and enhance quality of life.

Module 3: Recognize Your Stressors: Assists participants in recognizing their own symptoms of stress in response to their personal stressors in their work life and personal life. The CCN will learn how to develop personal strategies to manage stress in their professional and personal lives.

Module 4: Self-Care & Self-Compassion: Self-care, and self-compassion media resources. The CCN will be able to apply self-care strategies to their self and gain resources for self-help.

Module 5: Reflection in the Mirror: A self-reflective exercise for decentering, and positive reappraisal, photo voice digital reflective journal activity. The CCN will gain skills for designing a digital reflective journal and a mindfulness reflective strategy for making positive changes in self.

Module 6: Your Mental Fitness: Information is provided on the psychological and psychosocial impairments of accumulated stress, burnout, compassion fatigue, PTSD, and the related behaviors on their personal life and professional life. Audio from Christopher Reeve from Husband, Father, and Superman – Nothing is Impossible at: <https://soundcloud.com/simonschuster/nothing-is-impossible-audio>

Module 7: Intentional Care - Building Resilience: The CCN will be able to practice some simple exercises in daily life to improve resilience.

Module 8: Find work-life balance. Learn part of self-care is maintaining a positive and healthy environment in both work and personal life. Maintaining a work-life balance is critical to the CCN self-care. Self-efficacy and advocacy in peer-mentoring for healthy workplace relational communication to decrease workplace stress with positivity. CCN practices chosen self-care and self-compassion exercises to improve work-life balance.

At the end of module eight the post-intervention Nursilience survey was administered.

The Nursilience website also provided additional resources for CCN stress reduction (see Appendix B).



**Higher prevalence of burnout in high intensity work areas.** CCNs are most often the casualties of burnout and the PPI related to caring for the most critically ill patients and their family members. The patient/family dynamics and the vicarious or secondary traumatic stress exposure of the CCNs to the emotional distress and heightened need for caring and compassion can be overwhelming. The CCN may develop compassion fatigue and a decreased sense of compassion satisfaction in response to the secondary traumatic stress, and may even exhibit symptoms of PTSD. The variables of PPI (inclusive of burnout, compassion fatigue, secondary traumatic stress, PTSD and incivility) in association with compassion satisfaction have been researched comprehensively. According to the evidence, these variables are the leading causes for CCNs to leave the specialty and often the nursing profession (Christie & Jones, 2014; Hinderer et al., 2014; Mealer et al., 2012; Merlani et al., 2011; Moss et al., 2016; O'Brien, 2011; Rushton et al., 2015).

**Compassion fatigue.** The combination of secondary traumatic stress and burnout is known as compassion fatigue. Secondary traumatic stress is the resulting anxiety and stressful feelings derived from caring for patients and their traumatic experiences. The emotional exhaustion, depersonalization, and diminished feelings of personal accomplishment are the behaviors that emerge as the CCN is no longer capable of giving caring, empathetic, or compassionate care (Kelly et al., 2015). Compassion fatigue is an unhealthy coping mechanism that Kelly et al. touts to prevent caring relationships such as a professional caregiver to patients and their families and as a colleague to fellow nurses and to others in their personal life. The CCN may psychologically re-experience traumatic situational feelings, display symptoms of avoidance, and experience negative physiological responses, as well as various deleterious psychological and emotional behavioral symptoms of anxiety, such as difficulty concentrating,

nausea, and insomnia (Li et al., 2014). Carlson et al. (2015) conducted a study of care and caring in the ICU per family members' perception regarding communication and emotional support. The findings received higher ratings for the care provided but received lower ratings for communication, information, and emotional support. Carlson et al. surmised family members' increased levels of distress and emotional needs could be a factor, but also noted emotional distancing, tone of voice, verbalizations, facial expressions, and posture could communicate negativity. Increasing CCN awareness of unintentional negative communication, providing sources of emotional support and opportunities for processing their own emotions and feelings could improve relational interactions.

In a cross-sectional, quantitative research study, Kelly et al. (2015) examined predictors of compassion fatigue and compassion satisfaction among various acute care specialties. Kelly et al. found the lack of meaningful recognition is a significant predictor of compassion fatigue and the intent to leave. This was especially true for the younger 'Millennial' generation (21-33 years of age), and the more experienced nurses. Compassion fatigue is detrimental to critical reasoning, empathetic behaviors, and the safety of both the CCN and the patients in their care (Hegney et al., 2014; Hunsaker et al., 2015; Johnson, 2015). Compassion fatigue is a precursor for burnout and PTSD (Potter et al, 2013; Sacco et al. 2016; Sheppard, 2015).

**Burnout and PTSD.** CCNs are at a higher risk level for burnout and PTSD according to Mealer et al. (2012), Hinder et al. (2014). The investigators sought to determine the correlation with levels of resilience in association with healthier psychological profiles of CCNs. Recurring exposure to high-stakes emotional workplace stressors presents a high risk for PPI (Mealer et al., 2012; Mealer et al., 2014). In a concept analysis using Walker and Avant's (2011) strategy for analysis of PTSD in the nursing population, Mealer and Jones (2013) asserted the concept of

PTSD is best captured within the context of the nurse as wounded healer theory. Direct or indirect exposure to traumatic events according to Christie and Jones (2014) may result in a response of fear, helplessness, or horror. The individual may have symptoms of hyperarousal and avoidance, and this person may re-experience the trauma through episodic flashbacks or nightmares. Intrusions (the phenomenon for the recollection) or re-experience of the distress of the traumatic event is a typical occurrence as a normal adaptation immediately following the event. However, if intrusive thoughts persist over a period of months, it is a fair predictor of long-term CCN PTSD. Emotional stunting, increased absenteeism, presenteeism, and the avoidance for caring for patients that are similar to the traumatic patient encounter represent attempts to distance or minimize the disturbing emotions. Hyperarousal is a hypersensitivity or hypervigilance response as in an amplified startle response when administering care to patients or foreseeing an adverse event. PTSD in nursing is not viewed as a diagnosis but as a concept of the nurse psychologically wounded by a personal trauma, professional trauma, or a combination of both. The wounded healer theory by Conti O'Hare (2002) acknowledges all humans experience some level of trauma within their life and can have long-term physiological and psychosocial effects that can cause emotional, social, and spiritual disparity. The theory follows the premise that individuals have the capacity to heal trauma within them self, and possess the possibility of transforming and transcending past the experience to therapeutically heal others (Conti O'Hare, 2002; Christie & Jones, 2014; Zerubavel and Wright (2012).

Mealer and Jones (2013) reported there is an increased prevalence of PTSD among nurses. Additionally, there is an even greater incidence among those that actually meet the diagnostic criteria from the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*. Mealer and Jones predicted a critical global nursing shortage in the United States that is

projected to expand to 260,000 by 2025. Nursing is recognized as a wounded profession, and the walking wounded require intervention and support for self-efficacy towards self-healing, transformation, and the transcendence to self-actualization and therapeutically practice in the healing of others (Conti O'Hare, 2002; Christie & Jones, 2014; Zerubavel & Wright, 2012).

Mealer and Jones (2013) conducted a national survey to explore the association of burnout and PTSD from a CCN's psychological profile with the hypothesis that higher resilience capabilities of CCNs would be associated with a lower prevalence of symptoms of burnout and PTSD. Similar situations could be potentially mediated through the presence of problem-focused coping mechanisms and adaptive responses. Mealer et al. (2014) conducted a feasibility and acceptability study to institute a multimodal interventional resilience program for CCNs in an attempt to address CCNs with the psychological impairments of burnout and PTSD. The investigative team deemed the interventional program feasible and acceptable, and the results of the program showed a significant decrease in PTSD symptom scores after the intervention.

Hinderer et al. (2014) used a cross-sectional descriptive design in their study to investigate the relationship of caring for trauma patients with burnout, compassion fatigue, compassion satisfaction, and STS. The participants consisted of 128 trauma nurses within a 100-bed urban trauma center in an eastern university hospital in the United States. Ages of the sample population ranged from 22 to 61 years with a mean of  $37 \pm 10.7$  years. White females composed the majority of the population; the women were married or partnered and had an average of 8.7 years of trauma nursing experience. Hinderer et al. reported many participants had the presence of psychological resilience due to a lower prevalence of burnout and PTSD. Rushton et al. (2015) did a cross-sectional survey which assessed burnout and resilience levels and their association with moral distress and other psychological effects. The results confirmed that

moderators such as resilience, hope, and supportive strategies in high-intensity work environments reduced the prevalence of burnout and PTSD in CCNs.

Merlani et al. (2011) conducted a prospective, multicenter observational study that included 2,996 participants, with 73% being nurses. The conclusive findings indicated that the composition of team members factored into determinants of CCN burnout. The investigation covered the work of environmental stressors that foster burnout and negatively impact CCNs' welfare. The results revealed a greater number of males reported burnout than females, and younger single women without children were at a greater risk for burnout. The researchers suggested resources should be provided for psychological support to promote a positive team culture. In contrast, the results of a quantitative cross-sectional study by Li et al. (2014) had conflicting results. Li et al. aimed to determine the potential associations between core self-evaluation and burnout and the mediating role of coping styles in relationships. Li et al. reported the mean emotional exhaustion and cynicism was greater for female nurses compared to male nurses. The researchers suggested strategies to complement person-centered interventions for enhancing CCN's coping styles. Li et al. hoped for a potential direct and indirect effect to reduce burnout and enhance nurse efficacy.

According to Hinderer et al. (2014), critical care team members and peer-nurse relationships seem to have a significant influence on burnout. CCNs in the study indicated collegial support and supportive social networks were coping measures to prevent burnout. Hinderer et al. found the association of less supportive and negative peer-nurse and critical care team members with burnout was consistent among high-intensity care areas such as critical care areas and emergency departments. Dall'Ora, Griffiths, Ball, Simon, and Aiken (2015) completed a cross-sectional survey on 30 European hospitals as part of the *RN4CAST* study. The team

investigated the association of 12-hour shifts and nurses' job satisfaction, burnout and intention to leave. Dall'Ora et al. concluded social networks may be less available to the nurses working 12-hour shifts. Although the nurses preferred working fewer days in a week, the researchers determined that the longer shifts were associated with increased reports of burnout, decreased satisfaction, greater discontent with work schedule flexibility, and the intent to leave. Dall'Ora et al. realized the nurses' preference for the longer shifts and perceived work-life balance might be a misconception as other spheres of their life became compromised: work recovery, sleep, socializing, and physical and psychological well-being. Dall'Ora et al. did not include in their study the consideration of voluntary or mandatory paid or unpaid overtime or total weekly working hours that might have had a greater impact on nurse burnout.

In summary, compared with other specialties as reported by Moss et al. (2016) and Myhren, Ekeberg, and Stokland, (2013), more CCNs commonly experience burnout symptoms of emotional exhaustion (73%), lack of personal accomplishment (60%), and depersonalization (48%). Therefore, CCN turnover occurs frequently with annual rates ranging between 13% and 20% in comparison to other types of employment of approximately 10.4%. The multifactorial causes and prevalence of burnout and CCN turnover are documented well. The disproportionate CCN turnover increases stress levels, lowers staff morale, and affects the safety and quality of care for the critically ill patient. Stress is due to both the shortages of CCNs and the decreasing number of experienced CCNs, compared to the newer nurses coming on board. There is a decrease in productivity and increase in health care costs; the cycle goes on. At present there are no large randomized controlled trials that have studied the implementation and efficacy of potential preventative strategies or the treatment for burnout and PTSD in CCNs or for other critical care practitioners

**Walking wounded and negative workplace behaviors.** Negative behaviors and incivility are posited by Christie and Jones (2014) and Zerubavel and Wright (2012) to be related to the inequity of status, locus of control, interpersonal strain, and negativism follows the premise of the oppression theory. Lateral violence and workplace incivility are often directed to peers and those considered to be vulnerable or of a lower status than the perpetrator (Walrafen et al, 2012). The immoral behaviors are disruptive, harmful to both the victim(s) and the patients, and negatively impact the quality and safety of care. When perpetrators are not aware of their own internal pain, they lash out and project their pain and ‘woundedness’ on their peers, colleagues, and significant others. Their relational communications become verbal weapons or force fields of dysfunctional coping with their fears and frustrations (Christie & Jones) In a cross-sectional study, Purpora and Blegen (2015) hypothesized lateral violence was inversely related to positive peer relations and was associated with increased medical errors and adverse events. Positive and supportive peer relations and communications mitigate the impact of incivility and lateral violence on quality of care. The researchers’ found their hypotheses to be true. The environment in which such behaviors are left unchecked is one of incivility and distrust. The fostering of supportive peer relationships is crucial, but one may need to start with self: self-efficacy, self-reflection, self-awareness, self-caring, self-compassion, self-advocacy, and self-healing. Then, as the wounded healer, one would extend self to patients, peers, colleagues, and personal relationships.

**Self-care and self-compassion.** Self-care and self-compassion in nursing are an international concern. Duarte et al. (2016) focused on these topics and conducted a quantitative cross-sectional study. Duarte et al. explored how empathy and self-compassion were related to a professional quality of life. Furthermore, Duarte et al. investigated whether self-compassion

could serve as a protective factor for the influence of empathy on compassion fatigue. The researchers concluded high levels of emotional empathy were precipitous to compassion fatigue, and self-compassion was possibly a protective factor. Duarte et al. suggested self-care and self-compassion education would be positive interventions to reduce burnout and compassion fatigue.

Through a literature review, Mills et al. (2015) found the unselfish act of self-care was required for the well-being and harmony of nurses as both educators and advocates of health promotion. Self-compassion in nursing is an essential foundation of compassionate care that is expected of nursing as a caring profession. Referencing the words of the Dalai Lama, Mills et al. proclaimed self-compassion must first exist for one to develop genuine compassion towards others. The researchers asserted the correlation of nurses' self-care and self-compassion to compassionate care for patients needs further exploration. Mills et al. proposed the question: If nurses do not provide compassionate self-care, would they have the capacity to give compassionate care to others? From the study, Mills et al. surmised specific dimensions of compassion could be developed and could grow in a compassion cultivation training program.

Jazaieri et al. (2013) developed a randomized controlled trial (RCT) due to an interest in the cultivation of positive emotional states and qualities such as compassion. Jazaieri et al. assigned 100 adult participants to either a nine-week training program on compassion cultivation ( $n = 60$ ) or to a waitlist control condition ( $n = 40$ ). The researchers measured compassion in three domains: compassion for others, receiving compassion from others, and self-compassion over others. Those who attended the training program improved in all three areas of compassion. Jazaieri and associates deduced that certain domains of compassion can be cultivated through a training program.



Compassionate care in nursing is an international concern as the nursing shortage crisis and nurse burnout rages on and ravages the emotional vestiges of frontline nurses. These three studies presented by Duarte et al. (2016), Mills et al. (2015), and Jazaieri et al. (2013) are in accord. The researchers concluded that compassion can be trained. Furthermore, they found that self-compassion needs to be reflected upon as a component for giving compassionate care to others.

**Resilience and compassion satisfaction.** Compassion satisfaction, as related by Stamm (2010) and Johnson (2015), is the positive emotional aspect of caring derived by caregivers. Compassion satisfaction mitigates the risk of compassion satisfaction as it bestows a sense of resiliency to the human spirit. Resilience has been identified as a multifaceted construct that is correlated with an individual's determination and capacity to endure, adapt, and recover from adversity (Taormina, 2015). CCNs with higher levels of resilience illustrated their ability to cope and even thrive with the adverse complexities and stress of the critical care environment and to sustain compassion satisfaction with their clinical practice (Hinderer et al., 2014; Mealer et al., 2014). Resilience can be taught through cognitive behavioral therapy for self-awareness, self-care, and mindfulness interventions to increase a nurse's ability to adapt and cope with stress and adversity, and to initiate a therapeutic recovery experience from psychological trauma (Grafton et al., 2010; Hatler & Sturgeon, 2013; Leppin, Bora, et al., 2014; Mealer et al., 2014; Mealer et al., 2012).

**Nurse-to-nurse relationships.** Moore et al. (2013) affirmed healthy nurse-to-nurse relationships are crucial to a healthy work environment. Nurses must be empowered to resolve conflicts amongst themselves and their colleagues. CCNs need to possess a comprehension for the impact of how they interrelate has on the patients they care for, the health care organizations

they work in, and the nursing profession as a whole (France et al., 2011; Hoffmeyer, 2013; Lawrence, 2011; Padgett, 2013; Turner, 2014). Each nurse has the accountability to be a frontline advocate for embracing a new worldview, one of positivity for nurturing healthy professional relationships and caring work environments (ANA, 2015).

**Peer-mentoring.** For maintaining collegial relationships with ethical competence and standards of professionalism, peer-mentoring may be part of the solution. Peer-mentoring is based on the empowerment of each nurse to champion and model professionalism and civility (Padgett, 2013; Petosa & Smith, 2014; Purpora & Blegen, 2015). As related by Padgett, the importance of peer relationships in nursing is vital for coordinating patient care in three ways: via the shifts and transitions of care, by ensuring quality and safety, and through instituting and sustaining ethical competence for the professional standards of nursing. The adoption of collegiality as a framework for a peer-mentored nurse-to-nurse intervention is a positive step towards nurturing nurse-to-nurse relationships for a culture of resilience and healing care (France et al., 2011; Mills et al., 2015; Moore et al., 2013; Shoorideh et al., 2015). Instituting this measure would uphold the accountability and expectation of professional behavior, professional regulation, and quality of care (France et al., 2011; Mills et al., 2015; Moore et al., 2013; Seo, Kim, & Park, 2014). Li et al. (2013) purported a climate of collegiality at the unit level in nursing is necessary to reduce emotional exhaustion and depersonalization at nurses' individual levels.

**Interventional strategies.** Transforming health care is part of the DNP role for implementation of evidence-based practice and dissemination of nursing science (Kendall-Gallagher & Breslin, 2013). Nurse empowerment and professional nursing support are indicative of safe, healthy, and caring nursing workplaces (Laschinger et al., 2015). Hallmarks of a healthy

workplace are improved emotional intelligence, compassion satisfaction, and retention (Montes-Berges & Augusto-Landa, 2014). Resonant leadership, organizational structural support for nursing well-being, and an investment in psychological capital weld a significant influence on nurse satisfaction and retention (Laschinger & Fida, 2014). Jazaieri et al. (2013) recommended compassion cultivation interventional training programs as a means of nurses gaining meaningful recognition, compassion satisfaction, and resiliency. Through the direction of positivity displacing the negativity and disruptive behaviors so prevalent in today's critical care units, a remedy may be within the power of each nurse (Kelly et al., 2015; Rovinsky, 2014; Trossman, 2014; Turner, 2014). Each nurse must embrace changing existing negative organizational cultures by instituting measures that support the ANA (2015) position statement for incivility, bullying and workplace violence. In order to create a positive organizational culture, the AACN (2006) advocates a zero tolerance practice setting for incivility and workplace violence. The AACN expects every nurse to be accountable and to contribute to building healthier work environments. More studies are needed to explore interventional strategies to transform CCNs' work environments that promote healthy, caring and safe critical care patient care areas. In the subsequent section of the literature review, a comparison of limitations of the studies is presented.

**Comparison of the limitations.** Hinderer et al. (2014) acknowledged study limitations which included (a) a relatively small and homogenous sample from a single trauma center, (b) self-report data as social desirability, and (c) variances in nurses that responded and the nurses that did not respond to the survey. The Penn (2016) inventory was widely validated for psychological surveys for social workers; however, it was modified for the nursing population to assess secondary traumatic stress. Similarly, the study limitations reported by Rushton et al.

(2015) were also a homogenous sample, limited to the enrollment of 63% of participants from one health care system. It is unknown if other geographical locations and health care cultures would find similar results.

France et al. (2011) reported study limitations concerning the rigor in the quantitative measurement of the mixed-method study. France and his associates noted there was no verbiage regarding rigor for the phenomenological component of the study. Mealer et al. (2012) reported their study was limited due to generalization. However, the nurses that completed the survey were CCN members of the AACN, and their disposition might be diverse from the majority of other CCN populations.

Jazaieri et al. (2013) reported limitations for their study which indicated the compassion cultivation training program was successful in altering many aspects of compassion. However, the study did not afford an assessment of underlying mechanisms. Jazaieri et al. proclaimed another limitation was due to the self-reported results by participants. Laschinger et al. (2014) cited volunteer participants as a study limitation in their longitudinal study. The two phases of the surveys did not include all nurse participation, and researchers were not able to compare respondents to non-respondents. Generalization was also a concern, as the small number of nursing work units of a province could be problematic. The researchers noted that study results would be stronger with a larger sample of units and with nurses inside units. Self-reporting from single sources and common method variance are often challenged.

A synthesis of the literature review imparts the multifactorial causations, issues, and possible interventions to consider in addressing the problem of the CCNs shortage and its unfortunate effects on the critically ill patient and the remaining caregivers that care for them. Hinderer et al. (2014) asserted caregivers who care for trauma patients on a daily basis can

experience a high sense of compassion satisfaction from their work. However, some caretakers may experience burnout, compassion fatigue, and secondary traumatic stress. The nurses with higher levels of resilience, support systems, and positive coworker relationships had higher compassion satisfaction. Hinderer et al. found stronger cohesive relationships among coworkers could create a more positive and collegial work environment that imparts a higher compassion satisfaction from caring for trauma victims in a high-stress environment.

According to Rushton et al. (2015), the relationship among variables in psychological burnout, as well as modulating factors such as resilience and hope, support the development of innovative interventional strategies to decrease a nurse's vulnerability to emotional exhaustion. France et al. (2011) reported trust, respect, and empowerment were the conclusive factors that were essential constructs in the creation of a healing environment for nurses, patients, families, and health care disciplines. Mealer et al. (2012) concluded that ICU nurses with high resilience showed a significantly lower potential for developing psychological disorders such as PTSD, burnout, or altered perceptions related to their work-life environments.

Jazaieri et al. (2013) denoted 85% of participants that remained in the compassion cultivation training tolerated the program well. The first hypothesis was supported with the outcome comparison of the compassion cultivation training (CCT) participants and the waitlist control groups. The CCT resulted in notable improvement in all three orientations of compassion. Upon completion, CCT participants reported an increase in self-compassion and a reduction in fear of compassion (for others, from others, and for self). Jazaieri et al. found their investigation supported further investigation into the absence of compassion and a fear of compassion. Jazaieri et al. determined that compassion can be taught and learned through a CCT program as evidenced by the results of their study. Empirical discovery revealed three

components of compassion (for self, from others, and for others) are closely related with one another and to the universal concept of compassion.

Laschinger et al. (2014) proclaimed their findings validated efficacy in the consideration of both contextual and individual dimensions for the comprehension of nurses' job satisfaction. The results of the researchers' study provided greater comprehension and insight into how unit empowerment may influence both unit and individual level outcomes. Quality of the work environment impacts not only the unit level but also the improvement of the quality of patient care at the unit level and the nurse's individual workplace well-being. Laschinger et al.'s conclusive findings encourage support for evidenced-based strategies to guide nurse managers in their efforts to address the current nursing workforce shortage by creating work unit conditions that support professional nursing practice and ultimately retain valuable nursing resources within the health care system.

### **Summary**

Critical care environments are intense, complex, and emotionally charged with high stakes and adverse patient and family care needs (Mealer et al., 2014; Rushton et al., 2015). CCNs are at a high-risk for the development of moral distress and emotional exhaustion that may lead to compassion fatigue, burnout, secondary traumatic stress, and PTSD (Sacco et al., 2016). The symptoms are indicative of symptomatic psychological presentations of ineffective coping mechanisms (Christie & Jones, 2014). Higher levels of resilience increase CCNs' coping skills for the constantly changing adverse stress levels they experience and improve their resistance to psychological stress disorders (Christie & Jones, 2014; Hinderer et al., 2014; Mealer et al., 2012; O'Brien, 2011; Rushton et al., 2015; Shoorideh et al., 2015).

Resilience can be learned with self-care and mindfulness interventions. Increased self-care and self-compassion for CCNs are factors for developing higher resilience. Additionally, the factors decrease the prevalence of disruptive behaviors and workplace incivility (Grafton et al., 2010; Hatler & Sturgeon, 2013; Leppin, Bora et al., 2014; Mealer et al., 2014; Mealer et al., 2012).

Healthy CCN work environments foster resilience with positive nurse-to-nurse relationships, leaderships and organizations that instill trust. Such organizations promote respect for others and empower nurse autonomy, resulting in less burnout and improved retention of nurses (France et al., 2011; Hoffmeyer, 2013; Lawrence, 2011; Moore et al., 2013; Padgett, 2013; Turner, 2014). CCNs must be instrumental in promoting good health for themselves and their patients. Nurse-to-nurse peer mentoring for ethical competence and respectful behaviors are critical to the creation and maintenance of caring work environments that are professional and free of incivility (AACN, 2006, 2016; ANA, 2015; Jazaieri et al., 2013; Kendall-Gallagher & Breslin, 2013; Laschinger, Cummings et al., 2014; Laschinger et al., 2015; Montes-Berges & Augusto-Landa, 2014; Rovinsky, Saltzberg & Clark, 2015; 2014; Trossman, 2014; Turner, 2014). In the next chapter, a discussion of the research methodology and design chosen for the direct improvement project, and rationale for selection is provided.

### **Chapter 3: Methodology**

Critical care is one of the most stressful clinical specialty areas in nursing practice and has the highest rate of nurse burnout and attrition (Mealer, et al., 2014; Moss et al. 2016). The situation has caused a global CCNs shortage crisis that has negatively impacted the safety and quality of care for the critically ill patient and the work environment for CCNs (Rushton, 2015). On completion of the literature review, a lack of research remained for the effect of intentional interventions in prevention and/or to therapeutically mitigate the deleterious effects of prolonged high-intensity stress on CCNs, and the impact on CCNs' retention (Moss et al., 2016).

The purpose of the quantitative, cross-sectional, descriptive project was to ascertain what degree a relationship exists between the independent variable of CCNs' self-care and five dependent variables reflective of CCNs' resilience: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. The targeted CCN population sample was recruited through an electronic SurveyMonkey academic research target audience broadcast feature for distribution, and a self-selection sampling method from a population of diverse adult critical care areas across the United States.

The concept introduced for quality improvement was one of CCN self-care intervention to affect resilience, and assess for efficacy as a moderator for stress-related PPI, and CCN retention. The supposition of self-care and self-efficacy with the extension of self-care and self-healing into the critical care environment, the CCN as a wounded healer would ideally promote and role model positive and nurturing behaviors in the workplace. It is postulated that positive behaviors emulated and disseminated into critical care environments may presumptively combat the stress-related negative behaviors (reciprocal determinism) (Bandura, 1977; Bandura et al.,



1969). By adopting self-care/self-compassion and self-healing strategies, the CCN portrayed as a wounded healer undertakes a higher quest towards self-actualization. CCNs embracing self-care and resonating caring compassion and professional relational communication in the work place may inspire greater CCN compassion satisfaction in self and others. CCNs cannot continue to be the caregivers and healers of others without self-care, self-compassion, and self-healing (Laschinger et al., 2014; Wing, Regan, & Laschinger, 2015; Zerubavel & Wright, 2012).

The concepts for adult personal resilience, self-efficacy and selected social change theories also support the theoretical underpinnings of CCNs as wounded healers and guides the quantitative, cross-sectional, descriptive improvement project. CCNs that remain in the critical care environment often display the negative psychosocial symptoms of impaired coping and adaptation to vicarious stress (Mealer et al., 2014). Research has shown that CCNs with higher resilience characteristics exhibit a greater capacity to cope and adapt to the deleterious effects of adverse stress than those with less resiliency characteristics (Bandura, 1977; Bandura et al., 1969; Christie & Jones, 2014; Conti-O'Hare, 2002; Taormina, 2015; Zerubavel & Wright, 2012).

Resilience is a construct that can be taught and has shown to mitigate the harmful effects of adverse stress (Mealer et al., 2012; Mealer et al., 2014; Taormina, 2015). Researchers surmised that CCN resilience which is enhanced by self-care and mindfulness of self-compassion would also have an effect on the nurse's compassion satisfaction, interprofessional relationships, professional quality of life, development or recovery of PPI, or intent to leave the critical care specialty area or the nursing profession, as well as the capacity for compassion and caring of their patients (Mealer et al., 2014; Moore et al., 2013; Moss et al., 2016; Padgett, 2013; Purpora & Blegen, 2015; Ruston et al., 2015; Sacco et al., 2016; Shoorideh et al., 2015; Taormina, 2015).

In Chapter 3, a discussion of the methods for appraising associate relationships between the independent variable of self-care to CCN resilience characteristics is presented. Additionally, this chapter covers the discernment of any associate relationship between dependent and categorical variables. CCN resilience and well-being are delineated by compassion satisfaction, interprofessional relationships, professional quality of life, the presence or absence of symptoms representing PPI (burnout, compassion fatigue, secondary traumatic stress, PTSD, incivility), or intention to leave the critical care area. Furthermore, the chapter will assess the efficacy of a self-care intervention and inspiration for the peer-mentoring of positive nurse-to-nurse relationships. Chapter 3 focuses on the DPI project methodology, project design and organization, and includes the statement of the problem, the clinical questions, population and targeted sample selection, instrumentation for variables and measurements, validity and reliability, data collection procedures, and data analysis procedures. The chapter explores the required ethical considerations and limitations, and contains a project summarization.

The quantitative descriptive, relational design is nonexperimental, cross-sectional, and attempts to determine if there are associative relationships between the project variables; there is no attempt to explain cause and effect. However, the design does describe the sentiments and attitudes or trends of the CCNs targeted population in their natural occurring critical care setting through numerical values. Measurements were performed through the Nursilience descriptive survey with incorporated vetted instruments to determine associate relational variables. Descriptive statistics were utilized to discern and measure the strength and direction of associations between two variables on a minimal, nominal, or ordinal level and to formulate a relational inference from the data, through an appraisal of the same participants in two different points in time: pre- and post-self-care intervention (Sylvia & Terhaar, 2014).

Measurement through the standard Likert-style descriptive survey questions was utilized to collect data to determine statistical significance of relationships of the Nursilience project variables. The Likert scale provides a strategy for quantifying data and allays subjective interpretation by the audience. A data set was constructed which contributed to a well-defined objective and measurable reflection of how relationships are inferred with the aim of purposing the results toward problem solving rather than pointing to a humanistic phenomenological meaning data. Data analysis through statistical methods attribute to inferences of numerical results through inductive and deductive reasoning to further contribute to the advancement of scientific knowledge (Melynck & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014).

### **Statement of the Problem**

It is not known if and to what extent CCNs' resiliency is affected by self-care and how it is associated with resilience as reflected by the dependent variables of compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. The symptomatic presentation of PPI resulting from burnout, compassion fatigue, secondary traumatic stress, and PTSD are the leading causes of CCNs to leave the critical care specialty or the nursing profession altogether (Moss et al., 2016). Unfortunately, the nurses that remain and coexist may also be suffering from PPI (Christie & Jones, 2014; Mealer et al., 2012; Moore et al., 2013). The CCNs are in crisis and are considered to be impaired practitioners, Conti-O'Hare's (2002) nurse as wounded healer portrayed them as the walking wounded. Christie and Jones (2014) recognized the subsequent behavioral significance associated to incivility and lateral violence in nursing. Remen (1996) reflected how unrealistic it is that caregivers (CCNs) can be immersed in their patients' and families' pain and suffering on a daily basis and emerge without being touched by it.

The CCN's whose coping strategies and abilities are ineffective, are considered as the walking wounded when the impact of the traumatic experience goes unrecognized and unresolved (Christie & Jones, 2014). Christie and Jones relate the wounds or scars incurred by prior unresolved events may cause problems with relationships in all facets of a nurse's (CCN's) life. As intimated by Zerubavel and Wright (2012), these walking wounded are in denial of their own personal suffering and psychological injury. These CCNs project their '*woundedness*' on their patients and co-workers without recognizing their own PPI and stunted ability to empathize with others. Negative and demeaning nurse-to-nurse interactions resulting from PPI are the cultural norm in many critical care units, and are reported by new nurses to be the unhealthy environments they are presented to and mentored in (Li et al., 2016; Moore et al., 2013; Walrafen et al., 2012; Wing, Regan, & Laschinger, 2015).

According to Bandura's (1977) social learning theory, the new nurses may emulate the behavior they are immersed in as a mechanism of survival (known as reciprocal determinism), or leave, perpetuating the CCN shortage and PPI either way. Although the CCNs shortage is multifactorial, PPI contributes to the turnover or lack of nurses at annual rates exceeding 25-60%. Mealer et al. (2014), Moss et al. (2016) assert interventions to reduce CCNs' attrition are a high priority for nursing and health care leaders. The critical care patient is subjected to a less caring environment, a higher risk of medical error, higher rates of hospital-acquired infections, and higher mortality potential due to decreased CCNs in the workforce and less experienced CCNs without the benefit of experienced nurse mentors due to PPI or attrition. Professional communication is affected and can result in patient harm (Christie & Jones, 2014; France et al., 2011; Lowe, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

## Clinical Questions

The two clinical PICOT questions were formulated to assess the DPI project assessment for associative relationships between CCNs' self-care, mindfulness self-compassion, resilience, and CCNs' self-efficacy through a web-based multimodal intervention program. The enhancement of CCNs' resilience for healthier coping and adaptation to high-intensity stress, to promote recovery from PPI, and to develop a healthier critical care environment evidenced by respectful communication and empathetic behaviors toward patient/families and colleagues was proposed (Bandura, 1969,1977; France et al., 2013; Mealer et al., 2014; Sacco, 2015).

The phenomenon of reciprocal determinism derived from CCNs' self-efficacy to extend self-care into the critical care environment as a facet of self-care in a peer-mentored approach was also a supposition of the DPI project (Bandura, 1969, 1977; Christie & Jones, 2014; Mealer et al., 2014; Walrafen et al., 2012; Zerubavel & Wright, 2012).

**R1.** For CCNs, can the implementation of an innovative multimodal web-based self-care intervention have an associate relationship on resilience reflected by (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area over a two-week period?

**R2.** In CCNs, can self-care extend into the workplace and have an associate relationship on interprofessional relationships and professional quality of life?

Pre- and post-intervention descriptive surveys were administrated to appraise for relationships between self-care and CCNs' resilience, reflected by compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. A cross-sectional, descriptive design is a nonexperimental design that describes the relationship between two or more variables and any emerging phenomenon. The purpose of

the design is to formulate additional hypotheses to further the advancement of scientific knowledge. Surveys are a form of descriptive studies with data collected through self-reporting of participants for information specific to a condition or status that is being assessed. In a cross-sectional design, all measurements are collected at the same points in time, rather than over a period of time (Melynck & Fineout-Overholt, 2011).

### **Project Methodology**

The phenomena to be understood from the DNP DPI project, was the relationship of CCNs' self-care on resilience reflected by associated variables of: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. This project explored the efficacy of an innovative multimodal self-care intervention program intended to support CCNs' resilience and coping abilities to foster compassion satisfaction, and mitigate PPI due to high-intensity adverse stress and CCNs' retention. A quantitative methodology was applicable to this study and the objective of determining associative relationships between specified variables of self-care to resilience and CCN well-being related to the Nursilience project variables.

The quantitative method allowed for an efficient, cost-effective, and timely approach for a focused systematic data collection process. The Nursilience descriptive survey instrument was used to obtain and measure the project specific information from the  $N= 88$  CCN participants. Qualitative research or a mixed-method design would have also been appropriate for the project. However, with time constraints and efficiency considerations, the quantitative method was more suitable. Additional research with one or both methods may add a richer understanding of the theoretical framework and give more humanistic meaning.

In review of the existing empirical literature, predictive and inductive reasoning guided the development of the practice improvement project clinical questions and propositions. Researchers conceptually support self-care and self-compassion as having a positive effect on CCNs' resilience through enhanced coping and adaptability to adverse stress (Arch et al., 2016; Shiparski et al., 2011; Yang, Zhang, & Kou, 2016). Higher levels of compassion satisfaction would theoretically have a reciprocal relationship to enhanced resilience, whereas the development of PPI or intent to leave the critical care specialty area would have an inverse relationship. Richards (2014) explored the power of self-care and CCNs' self-efficacy in the role modeling of positive, respectful, and professional behaviors as a facet of self-care. Richards asserted self-care was conducive to transforming culture, improving resilience, and boosting retention. Self-care is individualistic and starts with self-reflection and awareness of one's own humanistic needs (Mills & Fraser, 2015). Self-fulfilling care that elicits self-value is radiated outward to affect others and is integral to the advent of safer and healthier critical care environments (AACN, 2006; AACN, 2016; ANA, 2015; Duarte et al., 2016; Lim & Bernstein, 2014; Rouxel et al., 2016; Saltzberg & Clark, 2015).

### **Project Design**

The quantitative cross-sectional method was a feasible approach for attaining a sample representative of the targeted CCNs population from diverse adult critical care areas across the United States. Project recruitment was conducted through an electronic survey distribution and self-selection sampling method using SurveyMonkey. The quantitative cross-sectional, descriptive, relational project design, afforded the assessment of assumptive propositions through the appraisal of emerging interrelationships and inferences between the Nursilience variables.

Data analysis was conducted through SPSS version 24. Generalization and potential replication of results supported the benefits for future projects

Data was collected through the Nursilience descriptive self-assessment survey developed specifically for the DNP project (see Appendix A, G). The Likert-style Nursilience survey instrument was constructed to answer the project's clinical questions. The Nursilience survey engaged CCNs in self-reporting for self-care and personal resilience as related to compassion satisfaction, interpersonal relationships, and professional quality of life. The well-being of CCNs was measured by the existence or absence of PPI symptoms as well. PPI symptoms may be expressed as emotional exhaustion, depersonalization, desensitization, constant fatigue, cynicism, negativity, and decreased empathy (Christie & Jones, 2014; Consiglio, 2014; Montgomery et al., 2015). The CCN may also experience a reduced sense of personal achievement and feelings that pervade all aspects of their personal and professional work life (Zerubavel & Wright, 2012).

From the pre- and post-Nursilience survey results, comparative categorical variables and response data was extricated and evaluated. The *Nursilience* descriptive survey consisted of 49 questions in a Likert-type survey format with statements applicable to the intent of the PICOT clinical questions. The Nursilience survey incorporated previously vetted instruments selected for the project discussed in the instrumentation section (see Appendix A, G). The survey instrument was submitted for approval to the GCU DNP DPI Faculty Chair and the Learner DNP Project (LDP) Committee members for validity and reliability purposes.

Pre- and post-intervention Nursilience surveys were administered to appraise for associative relationships between the CCNs' self-care on CCNs' resilience associated with dependent variables for compassion satisfaction, interprofessional relationships, professional



quality of life, PPI, or intent to leave the critical care specialty area. Surveys are a form of descriptive study with data collected through self-reporting of participants for information specific to a condition or status that is being assessed (Melynck & Fineout-Overholt, 2011).

### **Population and Sample Selection**

Self-selection sampling of the targeted CCNs population was used for the quantitative, cross-sectional, descriptive improvement project. CCNs were recruited through a targeted academic research audience feature per SurveyMonkey in an electronic survey broadcast distribution, self-selection sampling method, from a population of diverse adult critical care areas across the United States. Self-selection sampling is a form of nonprobability sampling, also known as judgmental, selective, or subjective sampling. This type of sampling is based on the specialization of knowledge inherent to the population of the research issue or their capacity and willingness to participate. Self-selection sampling allows individuals or organizations to exercise a choice in taking part in a research project of their own volition. It is a two-step process; (1) publicizing the need for participants, (2) verifying the relevant participants and accepting or rejecting them (Melynck & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014). It was determined through a sample size power calculation that at minimum of 30 participants would be required for a significance level determination.

The potential participants are informed of the study through informational flyers, online notice boards, or other social media. Criteria to be suitable for the research project needs to clearly define the guidelines and requirements for participation. Advantages of self-sampling include the reduction in time necessary to obtain appropriate participants for a sample. Also, self-sampling may induce greater commitment to participating in the study and may provide more insight in the phenomenon being studied. A disadvantage of self-sampling is self-selection bias.

The decision to participate could be an inherent bias in the participant's characteristics/traits and could lead to a sample that does not represent the population or a sample that exaggerates a particular finding from the study (Laerd, 2012).

The GCU IRB Committees approved the CCNs recruitment for voluntary nurse participants and the volunteer CCN participants' informed consent. The targeted samples of CCNs are from diverse adult critical care units that include medical, surgical, open-heart, neuro, and thoracic critical care areas. The project demographics collected from the volunteer participants included years of practice in the critical care environment, age, gender, marital status, ethnicity (optional), level of nursing academic education, shift worked, and number of years in a current critical care unit.

Upon gaining GCU IRB approval, the Nursilience Likert-style descriptive survey was distributed to potential volunteer participants (see Appendix G). Through a SurveyMonkey targeted academic research audience feature, the Nursilience data collection survey was broadcasted to various e-mail and message boards throughout the United States to the targeted CCN population. The survey instrument forced informed consent that required agreement in order to proceed with the survey. At the end, the participant was provided the Nursilience intervention website address to follow (<https://sites.google.com/site/nursiliency/home>). The CCN participants were not offered any other incentives other than the potential benefits derived from self-care. Anonymity and confidentiality were maintained, and survey results were reviewed only by the primary investigator.

### **Instrumentation**

The descriptive survey instrument was developed specific to the PICOT and clinical practice questions of the project (see Appendix A). The three vetted instruments were selected

from the public domain were deemed appropriate to measure the Nursilience project's independent variable (self-care) and dependent variables of resilience. The instruments were incorporated into one survey. The Professional Quality of Life Scale (ProQOL) version 5, authored by Stamm (2010), was used to measure compassion satisfaction and compassion fatigue through burnout and secondary traumatic stress interpretive statements. Stamm's instrument is freely available to researchers, as long as they give credit. The Interpersonal Conflict at Work Scale (ICAWS) is a 4-question Likert-type survey offered free of charge for noncommercial educational and research purposes by Spector and Jex (1997) (copyrighted in 1997). The ICAWS survey was the second section of the Nursilience survey instrument used to assess how well participants get along with others at work. Also, the ICAWS survey measured interprofessional relationships and was used to gauge the incivility and work conflict of the CCNs' work environment. The Quantitative Workload Inventory (QWI), a five-item scale developed by Spector and Jex (1997) was incorporated in the instrument to assess quantity of work that the CCNs perceived as an added stressor. One question was added to determine intention to leave the critical care specialty area. The GCU DNP Committee reviewed and approved the survey for the DPI project.

### **Validity**

Construct validity and reliability of Stamm's ProQOL is historically proven, as one of the most frequently-used instruments in over 200 published empirical papers. The ProQOL has been reported as a reliable measure with Cronbach alpha for subscales such as Compassion Satisfaction (CS =0.87), Compassion Fatigue (CF = 0.80, and Burnout (BO = 0.72) (Stamm & Figley, 2009). The ProQOL has three subscales that measure the separate construct mean score of each 10-question subscale of the 30 Likert-style responses ranging from 0 (never) to 5 (very

often). The ICAWS's internal consistency reliability, coefficient alpha is a reported average of 0.74 across 13 studies. The QWI is reported to have average internal consistency reliability, coefficient alpha of 0.82 across 15 studies. A single question inquiring of whether the CCNs were actively seeking other employment was included to explore intent to leave the critical care specialty area. The information is illustrated in the Table of Survey Instruments Partitioned in the Nursilience Survey (see Appendix A).

Pre- and post-intervention surveys were administered to appraise for self-care awareness and practice effects on CCNs' resilience as reflected by compassion satisfaction, interprofessional relationships, professional quality of life, or intent to leave the critical care specialty area. The Nursilience survey, created in and distributed through SurveyMonkey, had an embedded introduction to the project. The Nursilience survey followed the Belmont guidelines and ethics for human research inclusive of a clear description of the project. These guidelines included risks, benefits, time required to participate in the project, signified to be voluntary with the ability of the participant to withdraw at any time without penalty, confidentiality provided, and informed consent. The demographic data collection section of the survey collected data related to CCN's categorical variables. These demographics include age, gender, ethnicity (optional), marital status, level of nursing education, time spent in specific critical care unit, and years of critical care experience, and shift worked (Melynk & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014).

The Nursilience descriptive survey developed specifically for this DPI project was submitted for approval to the GCU DNP DPI faculty chair and to the learner project committee members for validity and reliability purposes. The validity of the data collected is dependent on the accurate measurement of the intended objectives to be measured for the project. The Likert-

type survey instrument affords variations in responses to the statements. Meaningful inferences may be derived. External and internal validity support the extent to which the results of the project are generalized (quantitative). Generalization is the ability to apply the findings from a study to the larger population of the sample. Internal validity represents the project's design, the appropriate theoretical instrumentation and measurements (Melnik & Fineout-Overholt, 2011).

### **Reliability**

Reliability is the extent to which an experiment, test or any measuring procedure is replicable and yields the same result with repeated trials (Melnik & Fineout-Overholt, 2011). The design of the project and the nature of the data being collected by previously vetted tools administered to CCNs from multiple diverse critical care environments across the United States present a fair probability for replication in similar populations. All contact with participants was conducted through an electronic venue, and anonymity and confidentiality were preserved. The anonymous SurveyMonkey research audience distribution option was used to broadcast the vetted survey instruments across the United States to diverse critical care specialty CCNs. CCNs and non-CCNs selectively responded. Generalization is supported for the replication of this project in local, regional, national or global CCNs populations with the expectation of similar results indicative of an assumptive degree of reliability.

### **Data Collection Procedures**

The quantitative, cross-sectional descriptive design afforded the assessment of the DPI project clinical questions and suppositions through the appraisal of emerging interrelationships and inferences between the Nursilience project variables. Data collection was executed through the Nursilience descriptive survey instrument which was specifically developed for the practice improvement project as previously discussed; the data passed the GCU approval process. The

ProQOL survey instrument version 5 (2009) measures the negative and positive effect of individuals caring for others that are experiencing trauma and suffering, and the instrument has sub-scales for compassion satisfaction (CS), burnout (BO), and compassion fatigue (F) (Stamm, 2010). A convenience self-selection sampling approach is a form of non-probability sampling. It is also known as judgmental, selective or subjective sampling and is based on the specialization of knowledge inherent to the population of the research issue or capacity and willingness to participate. Self-selection sampling allows individuals or organizations to exercise a choice in taking part in a research project of their own volition. It is a two-step process: (1) publicizing the need of participants, and (2) verifying the relevance participants and accepting or rejecting them. The potential participants are informed of the study through advertising, flyers, online notice boards, or other social media. In order to be suitable for the research project, criteria need to be clear, as well as the guidelines and requirements of participation. Advantages of self-sampling include the reduction in time necessary to obtain appropriate participants for a sample. Also, the participants may be more committed to participating in the study, and they may provide more insight in the phenomenon being studied. A disadvantage of self-sampling is self-selection bias. The decision to participate reflects an inherent bias in the participant's characteristics/traits, which could lead to a sample that is not representative of the population or that exaggerates a particular finding from the study (Laerd, 2012).

CCN recruitment was for voluntary nurse participants. The SurveyMonkey research target audience option was selected for the creation of the Likert-style descriptive survey distribution across the United States to CCNs. The targeted participants were recruited from diverse adult care critical care units such as medical, surgical, open-heart, neurological, thoracic, and other adult critical care areas. The demographics of volunteer participants for the project

included years of practice in the critical care environment, age, gender, marital status, ethnicity (optional), level of nursing academic education, years of experience in critical care, and the number of years in the current critical care unit (see Appendix G). The Nursilience surveys were administered over two weeks pre- and post- the Nursilience self-care intervention. The data collected from the Nursilience surveys were exported to an excel data sheet and then into SPSS for analysis and statistical reports.

### **Data Analysis Procedure**

The research design was selected to compare the independent variable of CCNs' self-care to the dependent variables of CCNs' resilience. Dependent variables included compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. A second assessment was focused on the CCNs' self-efficacy for a positive and nurturing peer-mentored nurse-to-nurse behavioral and relational communication, as a facet of self-care.

**R1.** For CCNs, can the implementation of an innovative, multimodal web-based self-care intervention have an associate relationship on resilience reflected by (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area over a two-week period?

**R2:** In CCNs, can self-care extend into the workplace and have an associate relationship on interprofessional relationships and professional quality of life?

Descriptive statistics included percentage; number, mean, and standard deviations were utilized to measure the strength and direction of associations between the variables on a nominal and ordinal level. Also, the instruments were utilized to formulate a relational inference from the data, through an appraisal of the same participants in two different points in time: pre- and post-

intervention (Sylvia & Terhaar, 2014). Data collection analysis employed the IBM SPSS 24 offered by GCU for the calculation of descriptive statistics as a means to generate a data set and summary. The Likert-style scales within the Nursilience survey provided descriptive statistical data that were numerically tabulated into nominal data.

Demographic data collected from the CCNs volunteer participants were presented in a narrative summary for the categorical variables of age, gender, ethnicity (optional), marital status, level of nursing education, years of critical care nurse experience, critical care unit of practice, shift, and time in current critical care unit (see Tables in Appendices). Statistical analyses were performed with descriptive statistics to obtain the mean, standard deviation, minimum, and maximum through SPSS to assess categorical demographic variable frequencies derived from the raw data gathered through the Nursilience survey. A paired sample *t*-test was used to evaluate statistical significance by looking at the two pre- and post-intervention sets of nominal and ordinal data means (see Figure 3 in Appendices). Statistical power and sample size calculations were conducted after data analysis to determine variance and statistical significance (see Figure 3). SPSS version 24 was employed to also generate visual representation of descriptive statistical findings in charts and graphs. The Nursilience project was adherent to ethical guidelines and considerations for human research as discussed in the next section.

### **Ethical Considerations**

The quantitative descriptive cross-sectional project adhered to the Belmont guidelines for human research set forth by the Grand Canyon University IRB. Through a convenience self-selection sampling process, the participants volunteered to participate in the practice improvement project on their own volition without coercion. The data collection process through the electronic survey included information of the project design and expectations of the



participant. Informed consent was embedded in the survey after the information section and affirmation were required by the participant to proceed in the project. The participant's anonymity and confidentiality were secured through the use of provided anonymous survey links distributed by SurveyMonkey. The executed digital and anonymous process minimized any bias potential by the researcher. Participants could withdraw from participating in the project at any time. No incentives other than the potential benefits derived by self-care were offered to CCN participants. Data were secured per GCU IRB policy and procedure in a database to maintain confidentiality.

The data collection process poses one limitation due to the self-selection sampling method, the self-report, and the specifically designed descriptive survey for the project. The targeted CCNs population sample was dependent on volunteerism. Advantages of self-sampling include the reduction in time necessary to obtain appropriate participants for a sample. Another advantage was that the participants might be more committed to participating in the study and might provide more insight in the phenomenon being studied. Surveys administered with selective sampling can incur bias when the sample does not accurately represent the attributes of the population. Selection bias could result from lack of coverage or response of the targeted population. Voluntary response bias may over represent information due to obtaining responses only from individuals with strong motives for participation (Laerd Dissertation, 2012).

### **Limitations**

Limitations for the DPI project were primarily realized with the SurveyMonkey feature selected to distribute to the targeted audience (CCN participants). Although the feature promoted academic research, it was not until the first Nursilience survey was launched that it became apparent the option was not conducive to the aim of the project. The survey required

modification from its original form with actual resilience statements to meet the 50 question limit. The pre- and post-surveys were found to not be distributed or responded to by the same CCNs. Responses were noted on the pre-Nursilience self-care intervention for time spent on self-care prior to participating in the intervention. As noted in the categorical variance demographic statistics, the two responding groups were diverse in academic preparation with the Nursilience survey 1 participants reporting a higher number of associate degrees ( $n=22$ , 44.90%); Nursilience survey 2 participants reported a greater number of bachelor degrees ( $n=19$ , 48.72%). The self-created participant ID of three letters and numbers was not supported with the SurveyMonkey specifications; therefore, the ID was eliminated hindering the capability of comparing individualized CCNs before and after Nursilience scoring results. Also, there were a high number of non-critical care area respondents to both Nursilience surveys, creating the question as to how reliable the Nursilience survey results are correlated to actual CCNs practicing in critical care areas.

Another limitation was the time constraints of the academic calendar and decreasing the original timeline of an eight-week intervention time period to a two-week period. The focus changed from the outcome results of the self-care interventions over a longer period of time to more or less how a minimal exposure to a greater self-awareness for self-care related to the outcome results. Since a self-selection methodology was employed with no incentives offered, the results retrieved from a broadcast distribution across the United States to nurses reflected a diverse group of participants. These participants were not the least homogenous in nature; therefore, they presented a replicable project.

## Summary

The direct practice improvement project associates the self-care of CCNs to their resilience capacity for coping with inexorable high-intensity stress levels of practicing as CCNs in the critical care environment. CCNs' self-efficacy in self-care awareness and practice was proposed as a therapeutic intervention to enhance CCNs resilience, moderate PPI and attrition. CCNs' resilience was assessed through variables for compassion satisfaction, interpersonal and interprofessional relationships, psychological and psychosocial well-being, and CCNs' retention in the critical care specialty area.

The quantitative cross-section methodology with a descriptive, relational design was selected as the most appropriate and efficient design for the practice improvement project. The self-selection sampling and self-reporting data collection were collected through a specifically developed '*Nursilience*' descriptive survey instrument. After GCU IRB approval was obtained, the targeted CCNs were recruited from a nationally distributed electronic survey. Confidentiality and human rights of participants were protected as per Belmont guidelines.

The project's intent to assess for relationships of self-care of CCNs associated to resilience was conceptualized in the spirit of an actual implemented therapeutic intervention, and to test for efficacy to add to nurse science in addressing the global CCNs shortage crisis. The theoretical framework underpins the self-healing of CCNs to transform and transcend to wounded healers and extend the care and healing through self to others and the CCNs' profession (Conti-O'Hare, 2002; Melnyk & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014).

The following chapter presents the results extrapolated from the descriptive data collected by means of the *Nursilience* survey. An overview of the project's problem statement, methodology, clinical research questions, and a summary of findings are included.

## **Chapter 4: Data Analysis and Results**

Critical Care Nursing is an advanced practice nursing specialty that is facing a global shortage crisis due to an increasing prevalence of stress-related psychological and psychosocial impairments such as burnout and compassion fatigue contributing to CCNs attrition (Moss et al., 2016). CCNs practice within a complex and high intensity stress environment caring for the most acutely ill patients in health care. Critical care patients' safety and health care outcomes are impacted negatively by the attrition of CCNs in the critical care setting (Mealer et al, 2012; Rushton et al., 2015).

Chapter 4 assimilates the results derived from the descriptive data collected from the study project participants and presents an overview of the problem statement, methodology, clinical research questions, hypotheses and/or phenomena, with a summary of significant findings. Descriptive outcome results of categorical variables of the sample elicited through the survey instrument for the independent variable of CCNs' self-care statistical significance for relationships to independent variables for CCNs' resilience, compassion satisfaction, interprofessional relationships, professional quality of life PPI, and intent to leave the critical care specialty area, and demographic significance.

### **Problem Statement**

It is not known if and to what extent CCNs' resiliency may or may not be affected by self-care or associated with compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. Although the CCNs shortage is multifactorial, PPI has contributed to the turnover or lack of CCNs at annual rates exceeding 25-60% (Moss et al., 2016). Mealer et al. (2014) assert interventions to reduce CCNs attrition are a high priority for nursing and health care leaders. The critical care patient is subjected to a less

caring environment, a higher risk of medical error, higher rates of hospital- acquired infections, and higher mortality potential due to decreased CCNs in the workforce and unexperienced CCNs without experienced CCN mentors due to PPI and/or attrition. Professional relational communication is affected and can result in patient harm (Christie & Jones, 2014; France et al., 2011; Lowe, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

### **Purpose of the Project**

The purpose of the quantitative, cross-sectional, descriptive project was to ascertain what degree a relationship exists between the independent variable of CCNs' self-care and five dependent variables reflective of CCNs' resilience: (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area. The targeted CCNs were recruited through an electronic survey distribution and self-selection sampling method from a population of CCNs. The CCNs came from diverse adult critical care areas across the United States (Melynck & Fineout-Overholt, 2011; Sylvia & Terhaar, 2014).

The concept introduced for quality improvement was CCNs' self-care and self-efficacy for positive and nurturing behaviors to enhance CCNs' resilience and potentially mediate PPI and CCNs attrition. Self-care and resulting positive behaviors may be emulated and disseminated into critical care environments as a solution to combat the stress-related negative behaviors (reciprocal determinism) (Bandura, Blanchard, & Ritter, 1969; Bandura, 1977).

### **Clinical Questions**

The two clinical PICOT questions were formulated to assess the project propositions and interventions of self-care for influence on resilience as measured by associated characteristic variables of: self-compassion, susceptibility to PPI, and CCNs' intent to leave. Envisioned

through a lens of positivity, an adjunctive intervention was proposed for CCNs' self-efficacy for caring and professional behaviors disseminated through peer-mentoring as a facet of self-care. It was a reasonable deduction that increasing CCNs' well-being and resilience would promote a healthier and safer critical care environment (Bandura, Blanchard, & Ritter, 1969; Bandura, 1977; France et al., 2013; Mealer et al., 2014; Padget, 2013; Sacco, 2015).

The quantitative methodology was employed, and the phenomenon of reciprocal determinism for the significance of self-efficacy and self-advocacy for a peer-mentored approach to enhance caring and compassionate behaviors was also assessed. Although quantitative methods represent statistical measurements and objective data, they are not typically adopted for the significant exploration for the subjective meaning of human behavior. However, they do allow for seeking out correlations and relationships between variables to support inferences and generalizations about the phenomenon being studied (Bandura et al., 1969; Bandura, 1977; Christie & Jones, 2014; France et al., 2011; Mealer et al., 2014; Padget, 2013; Walrafen et al., 2012; Zerubavel & Wright, 2012).

**R1:** For CCNs, can the implementation of an innovative multimodal web-based self-care intervention have an associative relationship on resilience reflected via (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty area over a two-week period?

**R2:** In CCNs, can self-care extend into the workplace and have an associative relationship on interprofessional relationships and professional quality of life?

### **Methodology and Research Design**

A nonexperimental quantitative, relational, descriptive design was utilized to explore the relationship between variables and to discern any emerging phenomenon leading to additional

hypotheses in the advancement of scientific knowledge (Melynk & Fineout-Overholt, 2011) . Data collection was achieved through a descriptive survey instrument titled *Nursilience*. The survey instrument was specifically designed for the project through the integration of previously vetted Likert-style scales selected to answer the clinical questions and collect CCNs demographics to determine categorical variables into one survey instrument (see Appendix A, G).

A cross-sectional design was instituted with all measurements collected at the same two points in time: pre- and post-intervention of a two-intervention period. The DNP direct practice improvement project implementation procedure was initiated through the creation of the *Nursilience* survey instrument in SurveyMonkey, and the utilization of a targeted academic research audience collector feature to digitally broadcast across the United States. The introduction in the survey described the project and provided assurance of confidentiality and anonymity. Informed consent was embedded on the landing page of the survey and included a description, risks, benefits, voluntary participation and right to withdraw, confidentiality, and an agree box that was required to be checked to establish consent for the CCNs to proceed to the *Nursilience* Survey. IP tracking was disabled to protect confidentiality (see Appendix G).

The *Nursilience* survey instrument was subdivided into sections that included the Likert-style vetted instruments: *Professional Quality of Life Scale* (ProQOL) version 5, *Interpersonal Conflict at Work Scale* (ICAWS), and *Quantitative Workload Inventory* (QWI). A single question explored CCN intent to leave the critical care specialty area. The SurveyMonkey distributed *Nursilience* Survey included a demographic section at the end of the survey to collect data related to CCNs' categorical variables of age, gender, ethnicity (optional), marital status, level of nursing education, years of critical care nurse experience, type of critical care unit

practicing in, shift, and time spent in current critical care unit. At the end of the pre-intervention survey (Nursilience survey 1), a URL link was provided for the Nursilience self-care website with access to the eight modules and resources. The Nursilience innovative, self-care web-based program was designed around the Hersch et al. (2016) web-based nurse stress management program model (see Appendix B).

The pre-interventional (Nursilience survey 1) and post-interventional (Nursilience survey 2) survey instruments for data collection were reviewed and tabulated. The tabulated data from the survey were exported into SPSS 24. A data instrument served to coordinate the descriptive presentation in the variable view to attain the mean, median, and mode per SPSS calculations.

### **Descriptive Data**

Demographic data were collected from the total of 49 CCNs and non-CCNs participants from the Nursilience pre-intervention survey (Nursilience survey 1); and from 39 CCNs and non-CCN participants from the Nursilience post-intervention survey (Nursilience survey 2).

Participants were recruited through the convenience electronic survey distribution and self-selection sampling method from a population of diverse adult critical care areas across the nation. Descriptive data were presented in a narrative summary for the categorical variables of age, gender, ethnicity (optional), marital status, level of nursing education, years of critical care nurse experience, critical care unit of practice, shift, and time in current critical care unit.

Table 1 presents the response frequencies by participant age in Nursilience survey 1. The largest group of respondents was in the age group of 50-59, which represented 38.78% of the participants. The lowest frequency of responses was received from the 30-39 age group, representing only 8.16% of the  $n = 49$  participants in the pre-intervention survey.



Table 1

*Demographics - Age - Nursilience Survey 1*

Answer Choices			Responses	
17 or younger (1)			0.00%	0
18-20 (2)			0.00%	0
21-29 (3)			12.24%	6
30-39 (4)			8.16%	4
40-49 (5)			20.41%	10
50-59 (6)			38.78%	19
60 or older (7)			20.41%	10
Total				49
Basic Statistics				
Minimum 3.00	Maximum 7.00	Median 6.00	Mean 5.47	Standard Deviation 1.25

The 50-59 age groups also showed a higher response on the post-intervention Nursilience survey 2, with n=39 participants at 25.64% (n=10). The highest representation came from the 60 or older age group at 28.24% (n=11), as illustrated in Table 2 The 50-59 and 60 or older age groups are representative of the baby boomers and soon to retire CCNs, which leaves one to ponder the significance of the interesting result.

Table 2

*Demographics – Age - Nursilience Survey 2*

Answer Choices		Responses		
17 or younger (1)		0.00%	0	
18-20 (2)		0.00%	0	
21-29 (3)		7.69%	3	
30-39 (4)		20.51%	8	
40-49 (5)		17.95%	7	
50-59 (6)		25.64%	10	
60 or older (7)		28.21%	11	
Total			39	
Basic Statistics				
Minimum 3.00	Maximum 7.00	Median 6.00	Mean 5.46	Standard Deviation 1.30

Table 3 represents the gender variables of the Nursilience survey 1. Results indicated 91.84% ( $n=45$ ) of the 49 respondents were females, only 8.16% ( $n=4$ ) were of the male gender.

Table 3

*Demographics- Gender Nursilience Survey 1*

Answer Choices		Responses		
Male (1)		8.16%		4
Female (2)		91.84%		45
<b>Total</b>				<b>49</b>
Basic Statistics				
<b>Minimum</b>	<b>Maximum</b>	<b>Median</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.00	2.00	2.00	1.92	0.27

The Nursilience survey 2 in Table 4 follows a similar trend in gender response with only two males (5.13%) out of the 39 participants. Although in recent years there has been a notable increase in male nurses in the nursing profession, female gender dominance was not explored for a statistical significance.

Table 4

*Demographics- Gender Nursilience Survey 2*

Answer Choices		Responses		
Male (1)		5.13%		2
Female (2)		94.87%		37
<b>Total</b>				<b>39</b>
Basic Statistics				
<b>Minimum</b>	<b>Maximum</b>	<b>Median</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.00	2.00	2.00	1.95	0.22

Table 5 Nursilience survey1 is representative of CCN participants' marital status and indicates 46.94% of the  $n=49$  of respondents were married. The next highest group of

participants for 28.57% ( $n=14$ ) were never married. Also, 20.41% ( $n=10$ ) reported they were divorced.

Table 5

*Demographics- Marital Status Nursilience Survey 1*

Answer Choices	Responses
↳ Married (1)	46.94% 23
↳ Widowed (2)	2.04% 1
↳ Divorced (3)	20.41% 10
↳ Separated (4)	2.04% 1
↳ Never married (5)	28.57% 14
<b>Total</b>	<b>49</b>

In the Nursilience survey 2, the highest number of participants of  $n=39$  were also married, with the never married as the next highest of participants as represented in Table 6.

Table 6

*Demographics- Marital Status Nursilience Survey 2*

Answer Choices	Responses
↳ Married (1) (1)	66.67% 26
↳ Widowed (2) (2)	0.00% 0
↳ Divorced (3) (3)	15.38% 6
↳ Separated (4) (4)	2.56% 1
↳ Never married (5) (5)	15.38% 6
<b>Total</b>	<b>39</b>

Basic Statistics				
<b>Minimum</b>	<b>Maximum</b>	<b>Median</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.00	5.00	1.00	2.00	1.52

Table 7 presents the response frequencies by nursing education degree level of the Nursilience survey 1. For the majority of the 49 CCN respondents, 44.90% ( $n=22$ ) attained an Associate Degree in Nursing. The remaining participants were nearly equally divided with

28.57% ( $n=14$ ) holding a Bachelor Degree in Nursing and 26.53% ( $n=13$ ) with a Graduate Degree in Nursing. According to the Institute of Medicine (IOM) (2011), most nurses have the goal of attaining at least a Bachelor's Degree in Nursing or higher by 2020 in the United States. This sample does not reflect this higher level of education goal.

Table 7

*Demographics- Nursing Education Level – Degree Nursilience Survey 1*

Answer Choices	Responses	
Associate degree	44.90%	22
Bachelor degree	28.57%	14
Graduate degree	26.53%	13
<b>Total</b>		<b>49</b>

Nursilience survey 2 (see Table 8) revealed the opposite information with the 39 participants (48.72%,  $n=19$  of the participants) attaining a Bachelor Degree in Nursing, and the remaining participants equally divided with an Associate Degrees and Graduate degrees in Nursing.

Table 8

*Demographics- Nursing Education Level – Degree Nursilience Survey 2*

Answer Choices				Responses	
Associate degree (1)				25.64%	10
Bachelor degree (2)				48.72%	19
Graduate degree (3)				25.64%	10
Total					39
Basic Statistics					
Minimum 1.00	Maximum 3.00	Median 2.00	Mean 2.00	Standard Deviation 0.72	

Table 9 represents an optional response for participant ethnicity from Nursilience survey 1. Of the 49 respondents, 87.76% ( $n=43$ ) were of the White ethnic, 6.12% ( $n=3$ ) were Black or African-American, and one participant reported he/she was from multiple races.

Table 9

*Demographics- Ethnicity Nursilience Survey 1*

Answer Choices		Responses		
White (1)		87.76%	43	
Black or African-American (2)		6.12%	3	
American Indian or Alaskan Native (3)		0.00%	0	
Asian (4)		0.00%	0	
Native Hawaiian or other Pacific Islander (5)		0.00%	0	
From multiple races (6)		2.04%	1	
Total			49	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 1.00	Mean 1.41	Standard Deviation 1.37

Table 10 represents the ethnicity of the participants from Nursilience survey 2. Again, from the majority of the 39 participants, 76.92% (n=30) reported they were of White ethnicity, one participant claimed Black or African-American, and 17.9% (n=7) reported they were from multiple races.

Table 10

*Demographics- Ethnicity Nursilience*

Answer Choices				Responses	
White (1)				76.92%	30
Black or African-American (2)				2.56%	1
American Indian or Alaskan Native (3)				0.00%	0
Asian (4)				0.00%	0
Native Hawaiian or other Pacific Islander (5)				0.00%	0
From multiple races (6)				17.95%	7
Total					39
Basic Statistics					
Minimum 1.00		Maximum 7.00		Median 1.00	Mean 2.08
				Standard Deviation 2.07	

Table 11 exhibits the number of years the participants has practiced as a CCN from Nursilience survey 1, and Table 12 reflects the number of years the participants reported practicing as a CCN from Nursilience survey 2. Both Nursilience surveys had the highest reported CCN practice for the >20 years with 34.69% ( $n=17$ ) of 49 participants in Nursilience survey 1 and 35.90% ( $n=14$ ) of 39 participants in survey 2. None of the other age groups aligned between the two surveys, suggesting a variance in the group of participants. However, the means for both groups were similar at 4.84 and 4.97 with standard deviations of 2.08 and 2.06.

Table 11

*Demographics- Years as Critical Care Nurse Nursilience Survey 1*

Answer Choices		Responses		
↳ 1-2 (1) (1)		10.20%	5	
↳ 3-5 (2) (2)		6.12%	3	
↳ 6-8 (3) (3)		14.29%	7	
↳ 9-12 (4) (4)		10.20%	5	
↳ 13-16 (5) (5)		12.24%	6	
↳ 17-20 (6) (6)		12.24%	6	
↳ >20 (7) (7)		34.69%	17	
Total		49		
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 5.00	Mean 4.84	Standard Deviation 2.08

Table 12 reflects the number of years the participants reported practicing as a CCN from Nursilience survey 2.

Table 12

*Demographics- Years as Critical Care Nurse Nursilience Survey 2*

Answer Choices		Responses		
↳ 1-2 (1) (1)		7.69%	3	
↳ 3-5 (2) (2)		12.82%	5	
↳ 6-8 (3) (3)		5.13%	2	
↳ 9-12 (4) (4)		7.69%	3	
↳ 13-16 (5) (5)		17.95%	7	
↳ 17-20 (6) (6)		12.82%	5	
↳ >20 (7) (7)		35.90%	14	
Total			39	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 5.00	Mean 4.97	Standard Deviation 2.06

Table 13 represents participants from Nursilience survey 1 and indicates the frequency of response from critical care nursing units. The critical care unit type with the greatest number of the 49 participants for actual critical care areas was the Medical ICU with 28.57% ( $n=14$ ). The Surgical ICU had 12.24% ( $n=6$ ), Cardiac ICU had 10.20% ( $n=5$ ), Neuro and Open Heart had one participant each, and Trauma ICU had two. The non-critical care participants made up the largest group at 40.82% ( $n=20$ ).

Table 13

*Demographics- Adult Critical Care Unit Type Nursilience Survey 1*

Answer Choices		Responses		
↳ Medical ICU (1) (1)		28.57%	14	
↳ Surgical ICU (2) (2)		12.24%	6	
↳ Cardiac ICU (3) (3)		10.20%	5	
↳ Neuro ICU (4) (4)		2.04%	1	
↳ Open Heart ICU (5) (5)		2.04%	1	
↳ Trauma ICU (6) (6)		4.08%	2	
Non-Critical Care (7)		40.82%	20	
Total			49	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 3.00	Mean 4.12	Standard Deviation 2.65

Nursilience survey 2 presented in Table 14 had 39 participants. Again, Medical ICU had the largest CCN practice area with 20.51% (n=8). Surgical ICU had 15.38% (n=6), and Cardiac ICU had 7.69% (n=3). There were no participants in the Neuro Unit, there were two Open Heart participants, Trauma ICU had 12.82% (n=5), and there were 38.46% (n=15) non-critical care participants. This author did not expect to see the large number of participants that did not work in a critical care area. However, the surprising numbers provided an opportunity to correlate the CCNs with non-CCNs and spoke to the interest of all nurses for self-care exploration.

Table 14

*Demographics- Adult Critical Care Unit Type Nursilience Survey 2*

Answer Choices		Responses		
↳ Medical ICU (1) (1)		20.51%	8	
↳ Surgical ICU (2) (2)		15.38%	6	
↳ Cardiac ICU (3) (3)		7.69%	3	
↳ Neuro ICU (4) (4)		0.00%	0	
↳ Open Heart ICU (5) (5)		5.13%	2	
↳ Trauma ICU (6) (6)		12.82%	5	
Non-Critical Care (7)		38.46%	15	
Total			39	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 6.00	Mean 4.46	Standard Deviation 2.52

Table 15 represents the pre-interventional (Nursilience survey 1) and Table 16 represents the post-interventional (Nursilience survey 2) reported number of years participants worked in their current critical care unit. Participants show a mean of 4.12 to 4.46 years in the same practice units with an SD of 2.65 to 2.52 years respectively.



Table 15

*Demographics- Years in Current Critical Care Unit Nursilience Survey 1*

Answer Choices			Responses	
↳ 1-2 (1) (1)			12.24%	6
↳ 3-4 (2) (2)			12.24%	6
↳ 5-6 (3) (3)			6.12%	3
↳ 7-8 (4) (4)			12.24%	6
↳ 9-10 (5) (5)			4.08%	2
↳ >10 (6) (6)			53.06%	26
Total			49	
Basic Statistics				
Minimum 1.00	Maximum 6.00	Median 6.00	Mean 4.43	Standard Deviation 1.91

Table 16 represents the post-interventional (Nursilience survey 2) reported number of years participants worked in their current critical care unit.

Table 16

*Demographics- Years in Current Critical Care Unit Nursilience Survey 1*

Answer Choices		Responses		
↳ 1-2 (1) (1)		12.82%		5
↳ 3-4 (2) (2)		15.38%		6
↳ 5-6 (3) (3)		10.26%		4
↳ 7-8 (4) (4)		5.13%		2
↳ 9-10 (5) (5)		10.26%		4
↳ >10 (6) (6)		46.15%		18
Total		39		
Basic Statistics				
Minimum 1.00	Maximum 6.00	Median 5.00	Mean 4.23	Standard Deviation 1.94

Tables 17 represents the response frequencies of participants by critical care practice shift in Nursilience survey 1. The majority of respondents from both surveys worked the day shift 7AM-7PM, with 57.14% ( $n=28$ ) of 49 CCNs and 60.53% ( $n=23$ ) of 39 CCNs. The night shift had 26.53% ( $n=13$ ) of 49 CCNs and 28.95% ( $n=11$ ) of 39 CCNs.

Table 17

*Demographics- Shift Nursilience Survey 1*

Answer Choices		Responses	
↳ Day 7AM-7PM (1) (1)		57.14%	28
↳ Night 7PM-7AM (2) (2)		26.53%	13
↳ Other (3) _____ (3)		16.33%	8
<b>Total</b>			<b>49</b>

Basic Statistics				
<b>Minimum</b>	<b>Maximum</b>	<b>Median</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.00	3.00	1.00	1.59	0.75

Tables 18 represents the response frequencies of participants by critical care practice shift in Nursilience survey 2.

Table 18

*Demographics- Shift Nursilience Survey 2*

Answer Choices		Responses	
↳ Day 7AM-7PM (1) (1)		60.53%	23
↳ Night 7PM-7AM (2) (2)		28.95%	11
↳ Other (3) _____ (3)		10.53%	4
<b>Total</b>			<b>38</b>

Basic Statistics				
<b>Minimum</b>	<b>Maximum</b>	<b>Median</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.00	3.00	1.00	1.50	0.68

Figure 1 represents the average participation time in the Nursilience web-based intervention program per participant. The responses were quite intriguing, mainly due to the fact that the survey was administered prior to obtaining access through the URL link. The link was provided at the end of the survey for participation in the Nursilience web-based self-care interventional program. It was also apparent in Nursilience survey 2, as represented in Table 20, that there were variances in the two responding groups of CCNs and non-CCNs. Unfortunately there was no way to track participants, nonparticipants, or the time spent in the web-based Nursilience self-care interventional program. It is conceivable that CCNs and non-CCNs, who did not participate in the project's web-based Nursilience self-care intervention, reported the time they devoted to their own self-care activities. The Nursilience survey 2 resulted with 10.26% ( $n=4$ ) of 39 participants reporting participation time spent in self-care interventions as daily; 15.38% ( $n=6$ ) reported two to three times a week, 10.26% ( $n=4$ ) reported once a week, and 64.10% ( $n=25$ ) reported no times per week.

Figure 1

*Demographics- Average Time in Nursilience Self-Care Program Survey*

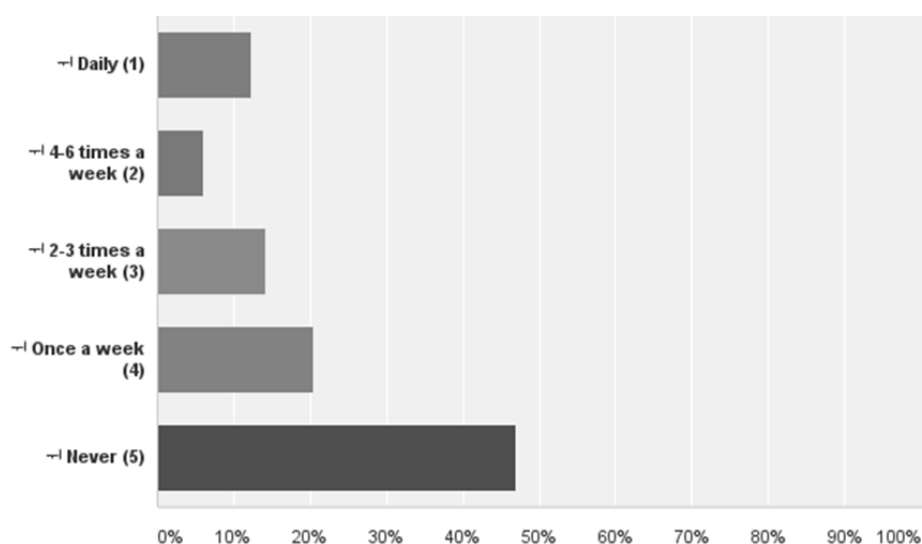
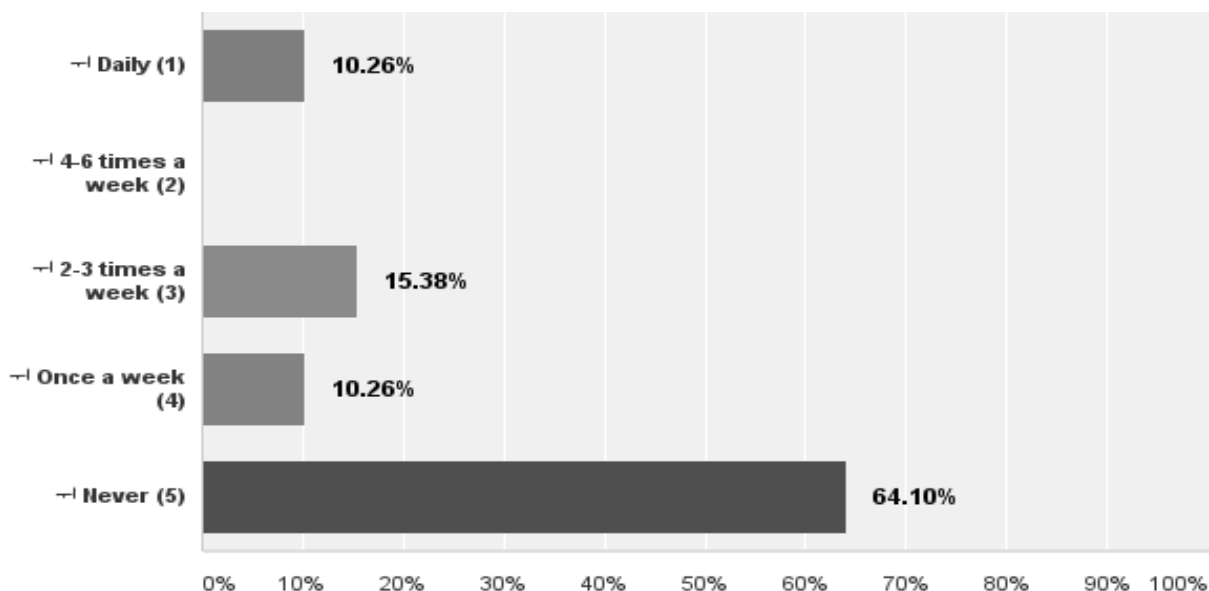


Figure 2 represents the average participation time in the Nursilience web-based intervention program per participant in Nursilience survey 2.

Figure 2

*Demographics- Average Time in Nursilience Self-Care Program Survey 2*



### Data Analysis Procedures

The research questions for this DPI project were to ascertain if there were associated relationships between CCN self-care and their resilience as reflected by variables for compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty. A statistical analysis was performed with descriptive statistics to obtain the mean and standard deviation, and to assess categorical demographic variable frequencies. Raw data were gathered through the SurveyMonkey generated Nursilience surveys. A paired samples *t*-test was used to evaluate statistical significance by looking at the two pre- and post-intervention sets of nominal and ordinal data means. SPSS version 24 was used to generate visual representation of descriptive statistical findings in charts and graphs.

## Results

A narrative descriptive summary is provided in Chapter 4 as reflected by data collected with the survey instruments. The Table of Instruments in the Nursilience Surveys 1 and 2 measures variables associated with CCN resilience (see Appendix A). The *Professional Quality of Life* (ProQOL) version 5 by Stamm (2010) was utilized to assess the constructs of compassion satisfaction, burnout, compassion fatigue, and secondary traumatic syndrome STS that each CCN reported experiencing within the previous 30 days. The ProQOL has been reported as a reliable measure with Cronbach alpha, for each subscale as Compassion Satisfaction (CS = 0.87), Compassion Fatigue (CF = 0.80), and Burnout (BO = 0.72). The ProQOL has three subscales that measure the separate construct mean score of each 10-question subscale of the 30 Likert-style statements. Response statement subscales range from 0 (never) to 5 (very often).

Stamm (2010) reported that compassion satisfaction (CS) is the derived pleasure and satisfaction individuals experience from being able to do their work well. The 10 CS statement subscore sums range between 23 and 41, and they equate to a score of 50, denoting an average score of (SD 10; alpha scale reliability 0.87). Sums of 22 or less represent a score of 43 or less and signify a low CS, whereas sums of 42 or more equate to a score of 57 or greater and indicate a high level CS. The Nursilience survey 1, pre-self-care intervention CS subscale, had scores ranging from 3.61 to 4.29, with a mean = 3.89, SD 0.92. The collective CS subscales sum was 35, equating to the 50 CS score, and was indicative of participants' CS as average. The Nursilience survey 2 participant's post-interventional self-care survey for CS subscale scores ranged from a slightly higher range of 3.62 to 4.59 with a mean = 4.09, SD 0.81. The collective subscale sum of 36.82 equated to a CS score of 50 for an average CS level.

According to Stamm (2010), burnout (BO) is one of the components of compassion fatigue (CF), and it is associated with the gradual onset of negative feelings expressed as hopelessness and an inability to cope with the stress of one's workload or work environment. Burnout and compassion fatigue are associated with low resilience. The ProQOL ten statement subscales have the same equitable scores as the compassion satisfaction (CS), although the alpha scale reliability is reported to be at 0.72. The Nursilience survey 1 of the pre-self-care intervention BO subscale had scores ranging from 2.02 to 4.52, with a mean = 3.41 and SD 0.98. The collective BO subscales sum was 30.77, equating to the 50 BO (CF) score and it indicated the participants' experienced burnout level as average. The Nursilience survey 2, the participant's post-interventional self-care survey for BO subscale scores, ranged from a slightly higher range of 2.05 to 4.62 with a mean = 3.49 and SD 0.96. The collective subscale sum of 31.42 equated to a BO score of 50 for an average BO level.

Secondary traumatic stress (STS) is a secondary element of CF, and it is related to the traumatic or vicarious exposures of adversely stressful events experienced by others, although exposures can be primary (self) experiences. Onset may be rapid and associated with a specific incident which could provoke symptoms of fear, insomnia, intrusions, and avoidance (Stamm, 2010a). The inability to cope (low resilience) and PPI are hallmarks of STS. ProQOL STS (CF) 10 statement subscale has the same equitable scores as the CS, although the alpha scale reliability is reported to be at 0.80. The Nursilience survey 1 for the pre-self-care intervention STS subscale had scores ranging from 1.74 to 3.64, with a mean = 2.61, SD 0.94. The collective STS subscales sum was 26.15, equating to the 50 STS (CF) score and indicative of participants' experienced STS level as average. The Nursilience survey 2 for participant's post-interventional self-care survey for STS subscale scores ranged from 1.85 to 3.24 with a mean = 2.38, SD 0.98.

A slightly lower collective subscale sum of 21.5 equated to a STS score of 43 or less, indicating a low STS level.

The CS, BO, and STS (CF) subscale statements of the ProQOL instrument were used to represent the CS, professional quality of life, and PPI variable measurements in the project associated with levels of CCNs resilience.

The ICAWS assessment is used to determine how well CCN participants' responded to interpersonal interactions with others at work. It was utilized to gauge incivility and work conflict of the CCNs work environment and to assess for variables of PPI (incivility), compassion satisfaction, and interprofessional relationships associated with CCNs resilience. The ICAWS is a 4-item, Likert-style, with a 5-point rating, ranging from 1 (less than once per month or never) to 5 (several times a day). The summative scores of each statement range from 4 to 20. High scores reflect high levels of interpersonal conflict at work. The internal consistency reliability coefficient alpha ( $\alpha$ ) is a reported average of 0.74 across 13 studies (Spector & Jex, 1997). The baseline pre-intervention Nursilience survey 1 of 49 participants revealed a mean = 1.79, SD 0.79. The collective summative rating of 7.78 was a relatively low score for interpersonal conflict at work. The post-intervention Nursilience survey 2 presented 39 participants with a mean = 2.01, SD 0.93. The collective summative rating of 8.07 of interpersonal conflict at work inferred a relatively low score, without a significant difference in comparison to the pre-interventional Nursilience survey 1.

Three statements were extracted from the QWI and were used to assess the quantity of work the CCNs perceived as an added stressor. The QWI statements were used in the measurement of CS, professional quality of life, and PPI, associated to CCNs resilience. The QWI is a 5-item scale with scores ranging from 1 (less than once per month or never) to 5

(several times a day), and summative scores of each statement range from 5 to 25. The QWI reportedly has an average internal consistency reliability coefficient alpha of 0.82 across 15 studies (Spector & Jex, 1997). One isolated question was added to explore intent to leave. The Nursilience survey 1,  $n=49$  participants had a mean= 3.06, with SD 1.01. The summative score of 9.2 reflected a low QWI score for quantitative work stress. Nursilience survey 2 post-intervention survey resulted with a mean= 3.01, SD 0.95. The summative score of 9.05 had a relatively insignificant decrease compared to the pre-intervention survey. Both of these scores reflected a low QWI score for quantitative work stress.

The question regarding the participant's intent to leave the critical care specialty area asked the participant, "Have you actively looked for other employment?" The responses of the 49 participants in Nursilience survey 1 are presented in Table 21 and displayed an overall mean = 2.55, SD 1.11. The Nursilience survey 2 results are presented by Table 22 for 39 participants. They had a mean = 2.44, SD 1.08, indicating no comparative difference. However, it was noted in both surveys that "sometimes" carried high percentages. In Nursilience survey 1, there was 1 "never" 16.33% ( $n=8$ ), 2 "rarely" 36.73% ( $n=18$ ), and a contrast of 3 "sometimes" at 30.61% ( $n=15$ ). The scores of 4 "quite often" and 5 "very often" were equally divided with 8.16% ( $n=4$ ) each. Nursilience survey 2 scored 1 "never" 25.64% ( $n=10$ ), 2 "rarely" 20.25% ( $n=8$ ), and a contrast of 3 "sometimes" at 43.59% ( $n=17$ ). The scores of 4 "quite often" and 5 "very often" were again equally divided with 5.13% ( $n=2$ ) each.



Table 21

*Intent to Leave – Nursilience Survey 1*

Answer Choices		Responses		
↳ Never (1) (1)		16.33%	8	
↳ Rarely (2) (2)		36.73%	18	
↳ Sometimes (3) (3)		30.61%	15	
↳ Quite Often (4) (4)		8.16%	4	
↳ Very Often (5) (5)		8.16%	4	
Total		49		
Basic Statistics				
Minimum 1.00	Maximum 5.00	Median 2.00	Mean 2.55	Standard Deviation 1.11

The Nursilience survey 2 results are presented by Table 22 for 39 participants.

Table 22

*Intent to Leave – Nursilience Survey 2*

Answer Choices		Responses		
↳ Never (1) (1)		25.64%	10	
↳ Rarely (2) (2)		20.51%	8	
↳ Sometimes (3) (3)		43.59%	17	
↳ Quite Often (4) (4)		5.13%	2	
↳ Very Often (5) (5)		5.13%	2	
Total			39	
Basic Statistics				
Minimum 1.00	Maximum 5.00	Median 3.00	Mean 2.44	Standard Deviation 1.08

A narrative descriptive summary is provided for Chapter 4. This summary reflects the data collected of the participants with the survey instruments. The Table of Instruments

incorporated into the Nursilience surveys 1 and 2 measures variables associated with CCN resilience (see Appendix A).

The *Professional Quality of Life* (ProQOL) version 5 by Stamm (2010) was utilized to assess the constructs of CS, BO, CF, and STS. Each CCN participant reported these experiences within the previous 30 days. The ProQOL has been reported as a reliable measure with Cronbach alpha, for each subscale as compassion satisfaction (CS =0.87), compassion fatigue (CF = 0.80), and burnout (BO = 0.72). The ProQOL has three subscales that measure the separate construct mean score of every 10-question subscale of the 30 Likert-style statements. Response statement subscales range from 0 (never) to 5 (very often).

Stamm (2010) related CS as the derived pleasure and satisfaction that individuals experience from being able to do their work well. The 10 CS statement subscore sums range from 23 to 41, they equate to a score of 50, and they denote an average score (SD 10) and an alpha scale reliability 0.87). The sums of 22 or less represent a score of 43 or less and signify a low CS; however, sums of 42 or more equate to a score of 57 or greater and indicate a high level CS. The Nursilience survey 1 pre-self-care intervention CS subscale had scores ranging from 3.61 to 4.29, with a mean = 3.89, SD 0.92. The collective CS subscales sum was 35 equating to the 50 CS score, indicating the participants' CS as average. The Nursilience survey 2 participants' post-interventional self-care survey for CS subscale scores ranged from a slightly higher range of 3.62 to 4.59 with a mean = 4.09, SD 0.81. The collective subscale sum of 36.82 equates to a CS score of 50 for an average CS level.

According to Stamm (2010), BO is one of the components of CF and is associated with the gradual onset of negative feelings expressed as hopelessness and an inability to cope with the stress of one's workload or work environment. BO and CF are associated with low resilience.

The ProQOL BO 10-statement subscale has the same equitable scores as the CS, although the alpha scale reliability is reported to be at 0.72. The Nursilience survey 1 pre-self-care intervention BO subscale had scores ranging from 2.02 to 4.52, with a mean = 3.41, SD 0.98. The collective BO subscales sum was 30.77 and equated to the 50 BO (CF) score, indicating the burnout level experienced by the participants was average. The Nursilience survey 2 participant post-interventional self-care survey for BO subscale scores ranged from a slightly higher range of 2.05 to 4.62 with a mean = 3.49, SD 0.96. The collective subscale sum of 31.42 equated to a BO score of 50 for an average BO level.

STS is a secondary element of CF, and it is related to the traumatic or vicarious exposures of adversely stressful events experienced by others, although exposures can be primary (self) experiences. Onset may be rapid and associated with a specific incident, provoking symptoms of fear, insomnia, intrusions, and avoidance (Stamm, 2010). PPI and one's inability to cope (low resilience) are hallmarks of STS. ProQOL STS (CF) 10-statement subscale has the same equitable scores as the CS, although the alpha scale reliability is reported to be at 0.80. The Nursilience survey 1 pre-self-care intervention STS subscale had scores ranging from 1.74 to 3.64, with a mean = 2.61, SD 0.94. The collective STS subscales sum was 26.15 and equated to the 50 STS (CF) score, indicating the participants' experienced an average STS level. The Nursilience survey 2 participants' post-interventional self-care survey for STS subscale scores ranged from 1.85 to 3.24 with a mean = 2.38, SD 0.98. A slightly lower collective subscale sum of 21.5 was equal to an STS score of 43 or less and indicated a low STS level. The CS, BO, and STS (CF) subscale statements of the ProQOL instrument were used to represent the CS, professional quality of life, and PPI variable measurements in the project associated with levels of CCN resilience. The ICAWS assessment was used to determine how

well CCN participants' responded to interpersonal interactions with others at work. It was utilized to gauge for incivility and work conflict of the CCNs work environment. Additionally, it was used to assess for variables of PPI (incivility), CS, and interprofessional relationships associated with CCNs resilience. The ICAWS is a 4-item Likert-style, with a 5-point rating ranging from 1 (less than once per month or never) to 5 (several times a day); summative scores of each statement range from 4 to 20. High scores reflect high levels of interpersonal conflict at work. The internal consistency reliability, coefficient alpha ( $\alpha$ ) is a reported average of 0.74 across 13 studies (Spector & Jex, 1997). The baseline pre-intervention Nursilience survey 1 of 49 participants revealed a mean = 1.79, SD 0.79. A collective summative rating of 7.78 was a relatively low score for interpersonal conflict at work. The post-intervention Nursilience survey 2 presented 39 participants with a mean = 2.01, SD 0.93. A collective summative rating of 8.07 of interpersonal conflict at work inferred a relatively low score, without a significant difference in comparison to the pre-interventional Nursilience survey 1.

Three statements were extracted from the QWI and were used to assess the quantity of work the CCNs perceived as an added stressor. The QWI statements were used in the measurement of CS, professional quality of life, and PPI associated to CCNs resilience. The QWI is a 5-item scale with scores ranging from 1 (less than once per month or never) to 5 (several times a day); summative scores of each statement range from 5 to 25. The QWI has an average internal consistency reliability coefficient alpha of 0.82 across 15 studies (Spector & Jex, 1997). One isolated question was added to explore intent to leave. The Nursilience survey 1 with  $n=49$  participants had a mean= 3.06, SD 1.01. The summative score of 9.2 reflected a low QWI score for quantitative work stress. The post-intervention Nursilience survey 2 had a mean= 3.01, SD 0.95. The summative score of 9.05 had a relatively insignificant decrease compared to

the pre-intervention survey, and both surveys reflected a low QWI score for quantitative work stress.

The question regarding the participant's intent to leave the CCNs special care area was "Have you actively looked for other employment?" The 49 participants in Nursilience survey 1 responses are presented in Table 23 and display an overall mean = 2.55, SD 1.11. The Nursilience survey 2 was presented in Table 24 for 39 participants, with a mean = 2.44, SD 1.08, indicating no comparative difference. However, it was noted in both surveys that "sometimes" carried high percentages. Nursilience survey 1 had 1 "never" at 16.33% ( $n=8$ ), 2 "rarely" at 36.73% ( $n=18$ ), and 3 "sometimes" at 30.61% ( $n=15$ ); 4 "quite often", and 5 "very often" were equally divided with 8.16% ( $n=4$ ) each. Nursilience survey 2 had 1 "never" at 25.64% ( $n=10$ ), 2 "rarely" at 20.25% ( $n=8$ ), and 3 "sometimes" at 43.59% ( $n=17$ ); 4 "quite often" and 5 "very often" were equally divided with 5.13% ( $n=2$ ) each.

The paired *T*-Test in Figure 3 reflected the diversity of the two population samples across the United States with a Mean=4.88; SD 2.43; 95% CI.

Figure 3

*Paired T-Test*

Paired Samples Statistics					
		Mean	N	Std. Deviation	Mean Std.Error
P Pair 1	Respondent ID	6040825088.000	50	1179326.23200	166781.91520
		0			
	US Region	4.8800	50	2.43813	.34480

Paired Samples Correlations			
		N	Sig.
Pair 1	Respondent ID & US Region	50	.171
			.234

### Paired Samples Test

		Paired Differences			95% Confidence Interval of the Difference Lower
		Mean	Std. Deviation	Std. Error Mean	
P Pair 1	Respondent ID - US Region	6040825083 .00000	1179325.81 400	166781.856 10	6040489922 .00000

### Summary

The major points to be gleaned from this DNP project are how the relationship of CCNs self-care relates to resilience and retention. The project explored the efficacy of an innovative, multimodal self-care intervention program on CCNs resilience through self-reporting. Inferences were sought from statistical significance for CCNs levels of coping with stress (resilience). CCNs resilience was represented by the independent variables of compassion satisfaction, professional quality of life, interprofessional relationships, PPI (BO, CF, STS, or incivility), or intent to leave the critical care specialty area. Chapter 5 summarizes the resulting data and interpretive data analysis in relation to the clinical questions, conclusions, and recommendations derived from the research project.

## **Chapter 5: Summary, Conclusions, and Recommendations**

A significant amount of research has been devoted to the global crisis for critical care nurse shortages related to the stress of critical care work and the critical care environment (Breau & Rheaume, 2014; Hinderer et al., 2014; Mealer et al., 2012; Mealer et al., 2014; Moss et al., 2016; Rushton et al., 2015; Shoorideh et al., 2015; Ulrich et al., 2014). The research revealed that the problem has multiple causative factors and identifies the psychological and psychosocial impairments (PPI) as the leading cause for CCNs attrition. However, there are no significant studies on the implementation and efficacy of potential therapeutic interventions to thwart the bleeding of CCNs from this vital advance practice nurse specialty. The scientific knowledge gap is found among the multiple causative factors of CCNs' PPI, CCNs' intent to leave the critical care specialty, and any intentional mitigation of the widely recognized problem. Chapter 5 presents a comprehensive summary of the direct practice improvement project.

CCNs are immersed in the care of the acutely ill and must always be vigilant for signs of distress in their patients. High vigilance and elevated stress draws upon the CCN's psychological and physiological reserves. Self-sacrifice without self-care is a prescription for the development of emotional exhaustion and PPI (Hegney et al., 2014; Hersch et al., 2016; Kelly et al., 2015; Li et al., 2014; Li, Black, & Garland, 2016; Mills et al., 2015; Taormina, 2015).

Duarte et al. (2016) and Jazaieri et al. (2013) explored self-care, self-compassion, and the many dimensions of professional quality of life. CCNs' high prevalence for developing PPI may be related to the lack of attention devoted to self-care. According to Shiparski et al. (2011), self-care practices need to be learned and prioritized, as self-care and self-compassion are

rudimentary to addressing the root cause of CCNs' PPI and intent to leave the critical care specialty area.

### **Summary of the Project**

The purpose of the quantitative cross-sectional, descriptive project was to ascertain if there was an associative relationship between the independent variable of CCNs' self-care and the associated dependent variables of CCNs' resilience: compassion satisfaction, PPI, or intent to leave the critical care specialty area. Also, there was an assessment on the efficacy of an innovative, web-based multimodal self-care intervention implemented to a targeted population of CCNs. The theoretical framework supported the clinical questions in the project. In order to extend healing to others, the CCNs must first attend to self-care and self-healing in order to transform and transcend to a wounded healer. Self-efficacy and moving past one's pain to attain self-actualization is harmonious with adult personal resilience (Bandura, 1969; Conti-O'Hare, 2002; Taormina, 2015).

The demographic variables of the project were explored for any relational significance that may also contribute to the scientific literature. Categorical variables included age, gender, ethnicity (optional), marital status, level of nursing education, years practiced as a critical care nurse, the type of adult critical care unit practiced in, and length of time in that unit.

It is not known if or to what extent CCNs' self-care affects CCNs' resiliency for coping with stress as reflected by compassion satisfaction, PPI, interprofessional relationships, professional quality of life, or intent to leave the critical care specialty area. Moss et al. (2016) released a statement from the CCSC purporting the increasing prevalence of burnout of critical care HCPs and the absence of any significant research studies that explored strategies to prevent or treat burnout in critical care HCPs. Moss et al. presented two areas for focused interventions.



The first area involved helping critical care personnel (CCNs) to cope with critical care work, and the second area dealt with improving the critical care environment. The problem is multidimensional and would require innovative multimodal interventions to mitigate the stress-related psychological effects on working in critical care and the associated attrition of CCNs. The researchers focused on the promotion of healthier coping strategies and therapeutic interventions for CCNs adaptation to the high-stressors of critical care (Duarte et al., 2016; Hersch et al., 2016; Jazaieri et al., 2013; Shiparski et al., 2011). It was postulated that the overlooked dynamic for enhancing resilience and developing a positive and professional critical care environment could be through self-care, self-efficacy, and focused advocacy (Bandura et al., 1969 Bandura, 1993).

Hersch et al. (2016) presented a randomized controlled trial of a web-based stress management program for nurses. Hersch et al. used their trial as a model of a stress reduction intervention that employed self-awareness, self-care, exploration of work-life stressors, and perceptions of workplace conflict and stress. The researchers' results highlighted the importance of interventions that focused on improving interpersonal relationships among nurses and other health care workers as it was shown to be a significant source of adverse stress.

Hersch et al.'s (2016) model was modified for use by CCNs and strategically developed into the 'Nursilience' web-based, self-care multimodal interventional program. The newly modified version was aimed at helping CCNs gain awareness of the various facets of self-care, and to better cope with the stress of critical care work and the critical care environment. The program was informational and multifaceted, and each module provided exercises and skills for self-care and managing stressors associated with CCNs' work (see Appendix B). The outcome of this multimodal self-care intervention presents a contributive conception of how CCNs' self-care

and self-efficacy are related to the two factors identified by Moss et al. (2016) for coping with the stress of critical care work and the critical work environment.

The results of this study provide a small contribution to the existing nursing science on implemented therapeutic interventions which address the CCNs' global critical care nurse shortage crisis. The remainder of Chapter 5 offers a summary of the overall study project findings. The findings are compared to the current literature and conclusions drawn. Recommendations for future research, clinical practice, and perceived implications will be provided.

### **Summary of Findings and Conclusion**

The quantitative research project was implemented as a cross-section, descriptive design to determine associative relationships between the independent variable of CCNs self-care and the dependent variables of CCNs' resilience reflected by compassion satisfaction, PPI, or intent to leave the critical care specialty area. Additionally, the project was aimed at assessing the efficacy of an innovative, web-based self-care intervention on the targeted CCNs population to enhance resilience. The subsequent section presents the findings, descriptive analysis, and conclusions founded on the two research questions and hypotheses of the practice improvement project.

Instruments were discriminately selected to measure the independent and dependent variable relationships, as well as to perform a comparison of pre-Nursilience (NS-1) and post-Nursilience (NS-2) intervention surveys to determine efficacy of the Nursilience self-care intervention. The Nursilience survey was an integration of three vetted and publicly available Likert-style surveys assimilated into one survey to measure the variables of the clinical research questions. The first instrument of the Nursilience survey was the ProQOL, utilized to get a

baseline measure for the CCN's professional quality of life and the negative and positive effect of individuals caring for others that are experiencing trauma and suffering. The ProQOL subscales for CS, BO, and CF were scored and compared to determine the efficacy of the intervention on the variables of resilience (Stamm, 2005; 2010). The constructs of CS sub-scores of the NS-1 sum was 35 compared to the NS-2 CS sum of 36.82; both scores equated to a CS score of 50, representing an average compassion satisfaction status in both groups. The BO (CF) score from the NS-1 and NS-2 also presented a score of average for BO/CF (PPI). The only notable significance of the ProQOL constructs was reported in the STS (CF) scores. The NS-1 participants scored average STS (CF), and the NS-2 participants scored a low secondary traumatic syndrome/compassion fatigue status (PPI). The outcome could be interpreted as an improvement, and it supports the hypothesis of an associative relationship. If both groups were known to be the same, (not determined), the results could represent the diversity of age groups, educational preparation, and critical care versus non-critical care participants.

ICAWS measures interpersonal conflict in the workplace and was the second instrument employed. It has been reported that job stressors and interpersonal strain are associated with burnout (PPI) (Spector & Jex, 1997). Relational communication is often reflective of how well the CCN gets along with others at work. Positive responses may be reflective of higher resilience and compassion satisfaction, whereas negative behavior and incivility in the workplace may reflect PPI and the CCN's intent to leave the critical care specialty. The ICAWS responses were correlated to the second clinical question and were meant to assess the CCN's pre-intervention and post-intervention for efficacy for positive self-care in the workplace and advocacy for caring and positive behaviors as a facet of self-care. The NS-1 and NS-2 scored low collective summative ratings for interpersonal conflict at work from the two groups of participants.

The Organizational Workload I (QWI), also constructed by Spector and Jex (1997), assessed the quantity of work the CCNs perceive as an added stressor and gave a glimpse of compassion satisfaction, PPI, and intent to leave the critical care specialty area. Again, both the NS-1 and the NS-2 reflected low summative scores for quantitative work stress. The statement to assess the CCN's intent to leave the critical care area by actively seeking other employment showed no comparative statistical difference between NS-1 and NS-2 participants. However, it was noted that both groups carried high percentages in the “sometimes” category for actively looking for other employment. Kelly et al. (2015) examined predictors of CF and CS among various acute care specialties. Kelly et al. found the lack of meaningful recognition is a significant predictor of CF and the intent to leave. This was especially true for the younger ‘Millennial’ generation (21-33 years of age) and the more experienced nurses.

The final portion of the survey instrument collected the CCNs demographic categorical variables of age, gender, ethnicity (optional), marital status, years of critical care experience, critical care area of practice, and length of time practiced there. The purpose of this instrument was to assess for variable relationships or trends. Findings in a study by Merlani et al. (2011) indicated that burnout was reported by a greater number of CCN males versus females, and younger single women without children presented a greater risk for burnout. In contrast, Li et al. (2014) reported study results from a quantitative cross-sectional study aimed at the determination of associations between core self-evaluation and burnout. The results from Li et al.'s study revealed the mediating role of coping styles in relationships and showed the mean emotional exhaustion and cynicism was greater for female nurses compared to male nurses.

The findings of the research quality improvement project had low percentages of male gender participants making an analysis by gender non-determinable for risk level of burnout.

Medical ICU was reported as the highest CCNs' practice areas in NS-1 and NS-2 respondents, whereas the non-critical care practice areas in both NS-1 and NS-2 were the highest other reported areas by respondents. The results of this project are to be indeterminate of the CCNs response in general or the extension of result findings and conclusions derived from this  $N=88$  sample of the CCN population at large. As noted the paired  $t$ -test results reflected the diversity of the two population samples across the United States with a Mean=4.88; SD 2.43; 95% CI.

Although, the efficacy of the Nursilience CCNs' self-care intervention has proved elusive to determine the outcome in the project, hopefully it adds to furthering the exploration and actual implementation of therapeutic intervention strategies to address the identified problem and the nursing science knowledge gap. Researchers need to continue to evaluate constructive strategies to positively change the CCNs' work environment. Additionally, further research is needed on implementation of therapeutic interventions and efficacy for improving CCNs' resilience for coping with the adverse stress of CCNs' work, and retention in the critical care specialty.

### **Implications**

The Nursilience project has strong empirical support. Literature reviews encompass the many dimensions of CCNs' compassion satisfaction and stress-related PPI. There is a need to further explore, implement, and evaluate the efficacy of therapeutic interventional strategies to improve CCNs compassion satisfaction, critical care work environments, enhance CCNs' resilience for coping with CCNs work, and improve CCNs' retention. CCNs' self-efficacy and advocacy for positive peer-mentored behaviors in the workplace was presented as a facet of self-care in the Nursilience program to enhance CCNs' resilience and positively impact patient safety and quality outcomes (Duarte et al., 2016; Padgett, 2013; Santos et al., 2016). Intent to leave is a significant predictor of three things: (a) the actual CCNs turnover, (b) the negative consequences

on patient care outcomes, and (c) the remaining CCNs' well-being (Bolima, 2015; Choi, Cheung, & Pang, 2013; Mantler, Godin, Cameron, & Horsburgh, 2015).

**Theoretical implications.** The thematic framework of various theories underpins the project propositions for CCNs self-care and self-efficacy to positively affect resilience and CCNs retention. The theories include Conti-O'Hare's (2002) nurse as wounded healer theory with the adaptation and application of Christie and Jones (2014) middle range theory of wounded healer theory for lateral violence, and fusion with Taormina's (2015) adult personal resilience theory. The theories reflect the self-healing of the walking wounded and the transformation through CCN's transcendence to the wounded healer. The CCN as wounded healer is more resilient and advocates for the peer-mentoring of positive caring and nurturing behaviors in nurse-to-patient/family, nurse-to-nurse, and critical care professional interrelations. Positive interrelations reflect Bandura's (1977) social learning and (1969) self-efficacy theories to explicitly regenerate a positive social and working CCNs' environment. In accordance with the phenomenon of reciprocal determinism, the individual will often assume the behaviors to which they are exposed. By following Bandura's theories, the negative behaviors will be replaced with positive behaviors in the workplace, and reciprocal determinism will be reset to a positive contagion effect (Dahl, 2015).

**Practical implications.** The concepts introduced in the project for quality improvement were CCNs' self-care and self-efficacy. The dissemination of positive and professional behaviors may mediate PPI-related CCN attrition and positively impact the global CCNs shortage crisis. Critical care areas with CCN vacancies or CCNs with PPI negatively impact the quality of care, safety, and outcomes of critical care patients.

The Nursilience DPI statistical data from the ProQOL descriptive statements were used to measure CCNs resilience associated with CS, CF, BO, and STS. From the Nursilience surveys of pre- and post-intervention, CCNs' exhibited average (moderate) levels of CS, CF, and BO. Average or moderate levels of the associated positive (CS) and negative (CF and BO) variables of resilience are consequential results on their own.

The ICAWS measured interpersonal conflict or what has been recently called interpersonal strain, strongly associated with burnout and incivility in the workplace. These results were low and supported the null hypotheses of the project self-care intervention of having no association. However, it was noted that there was a high response for the "sometimes" rating for seeking other employment or intent to leave. Likewise, the QWI had the same high "sometimes" rating for seeking employment, even as the quantity of work stress was rated low. The inference is that CCNs possess moderate levels of resilience and significant levels of contemplation for intent to leave. Following Taormina's (2015) adult personal resilience theory and proactively addressing any identified weaknesses in one or more of the four characteristics of resilience: (1) determination; (2) endurance; (3) adaptability; and (4) recoverability. Attention would be directed to enhancing the characteristics to improve CCNs' resilience.

A CCN's achievement and preservation of the balance between CS and CF in the critical care workplace and personal life is essential for a positive work-life balance and psychological and psychosocial well-being (Mills et al., 2015). All stakeholders, including CCNs, must be involved and be accountable to support the initiatives to improve CCN's critical care work and their environment (Duarte et al., 2016; France et al., 2011; Hegney et al., 2014; Laschinger & Fida, 2014; Laschinger, Borgogni, Consiglio, & Read, 2015).

The implementation of multi-focused theoretical and/or evidence-based interventions with an evaluation of efficacy is needed. Numerous research studies have determined the causes of CCNs PPI and attrition are multifactorial and will require multidimensional interventions. Purposeful and strategic actions are required to improve CCNs' resilience and to positively impact (a) compassion satisfaction, (b) interprofessional relationships, (c) professional quality of life, (d) PPI, or (e) intent to leave the critical care specialty areas. In turn this will positively impact the most critically ill patients and their family members.

**Future implications.** It is possible the project modifications made to meet the constraints of an academic calendar may have negatively impacted what might be a feasible intervention strategy. To replicate the project in a geographical population with the full eight-week Nursilience self-care intervention would provide a more practical implementation. Definitive results would occur to the efficacy of the proposed clinical questions. For a more significant exploration, a large randomized controlled trial (RCT) to reduce bias in implementing the Nursilience self-care interventions or other therapeutic interventional strategies to address CCN PPI and attrition is warranted. CCNs must be more instrumental in meeting their own self-care and self-compassion needs in order to have the capacity and empathy needed to give compassionate care to others.

## **Recommendations**

The nursing science gap identified for the direct practice improvement project will need additional exploration for theoretical or evidence-based interventions to address the prevalence of CCN stress-related PPI, global attrition, and evaluation of efficacy. Although the project did not support the propositions, recommendations are directed to expanding and advancing the project. A significant study is needed. Moss et al. (2016) recommended a large RCT for



improving CCNs' work, building CCNs' resilience to cope with adverse stress, and providing a healthier critical care work environment. Consiglio (2014) explored interpersonal strain in relationships and the increased prevalence of PPI and health symptoms developed among hospital staff. It is necessary to form and disseminate a shared strategic goal from organizational to national levels that embolden action by all stakeholders aimed at stress-reduction for CCNs and all HCPs.

Jazaieri et al.'s (2016) compassion cultivation training provides an intervention to increase compassion and compassion satisfaction and mitigate PPI. Hersch et al.'s (2016) stress-reduction programs need to be integrated into critical care areas. Therapeutic intervention programs must be further explored for efficacy on reducing CCN's PPI, and associated attrition. Stemming the CCNs shortage crisis is critical for healthy critical care environments and peer relationships in nursing for (a) coordinating patient care with positive relational communication, (b) ensuring quality care and safety, and (c) instituting and sustaining ethical competence for the professional standards of nursing (Duarte et al., 2016; France, Byers, Kearney, & Myatt, 2011; Padgett, 2013).

**Recommendations for future projects.** Recommendations for future projects must include implementation of therapeutic interventions to address the multifactorial causes of CCNs' PPI and intent to leave the critical care specialty area. A CCN's achievement and preservation of the balance between compassion satisfaction and compassion fatigue in the critical care area, as well as the promotion of resilience and healthy coping skills is essential for a positive work-life balance and psychosocial well-being. As asserted by Brown (2015), Duarte et al. (2016), and Mills et al. (2015), compassion satisfaction may bestow a sense of resiliency to the human spirit and abate compassion fatigue. Research recommendations for the future include

additional exploration of therapeutic interventions to address the CCNs shortage and the negative impact on critically ill patient's safety and healthcare outcomes. These interventions must be aimed at the root cause of CCNs' PPI, attrition, and their efficacy. The literature has shown causation is multifactorial and will require multi-focused interventions (Moss et al., 2016).

Consideration should be provided for expansion of research for strategies to aide in transforming negative stress into positive stress to reduce the harmful effects of adverse stress, and to promote personal and professional growth (McGonigal, 2015). It is a priority to implement psychological, psychosocial, and physiological health strategies that support CCNs, in and out of the workplace. Additionally, the actual implementation of strategies to support the concomitant evaluation for efficacy for CCNs' well-being is needed. The literature promoted healthier coping strategies and therapeutic interventions for CCNs' adaptation to the high-stressors of critical care (Duarte et al., 2016; Hersch et al., 2016; Jazaieri et al., 2013; Shiparski et al., 2011). Healthier coping strategies will enhance resilience and the development of a positive, and safer critical care environments for CCNs and their patients (Duarte et al., 2016; Hersch et al., 2016; Jazaieri et al., 2013; Shiparski et al., 2011).

However, the onus should not be placed on only the CCN's compassion satisfaction and resilience; it must be met with the exploration of strategies to decrease the stress of critical care work and the critical care environments. The increase of PPI in CCNs in the contemporary acute care environments has been correlated by Consiglio (2014) with interpersonal strain. Organizational requirements and policies may cause conflict and oppress the moral and emotional feelings of CCNs. Health care reform and reimbursement has encouraged false emotions in interpersonal interactions as in scripting or socially acceptable responses by the nurse. Consiglio (2014) asserts the negative impact on a CCN's emotional energy reserve and

resulting PPI may be exhibited as cynicism and detached response activated towards social interactions in the workplace.

DNPs can research organizations that have a record of success in keeping CCNs and have high patient outcomes, and replicate the evidences of practice through professional dissemination. Compassion satisfaction is increased when nurses are empowered, involved in decision-making, and are recognized and appreciated for their professional practice (Kramer, Maquire & Brewer, 2011; Laschinger et al., 2014; Laschinger et al., 2015). Balanced and healthy work settings with positive social capital enhance nurse interpersonal relationships and are associated with higher quality patient care and outcomes (Van Bogaert et al., 2016).

**Recommendations for practice.** From research to the review of this project, it has been a revelation as to how dire the problem is. Continued research and exploration of therapeutic interventions and strategies are not enough. The implementation and evaluation of efficacy is a direct response to the scientific gap and is a priority in research exploration. The two main areas cited for change are assisting CCNs in how to better cope with the stress of critical care work and how to change the critical care work environment. It is crucial that CCNs receive focused interventions to prevent PPI and becoming the walking wounded that are walking right out of our critical care specialty areas. Addressing the pain of caring and compassion in a positive and healing manner for each and every CCN is vital. The transcendence of CCNs from walking wounded to wounded healers need not just be of a myth; but a CCN's potential. If the CCNs PPI and attrition problem is not remedied, the impact becomes two-fold on the most critically ill of patients. CCNs staffing shortages will negatively impact patients' quality of care and outcomes. The lack of CCNs also propagates PPI and less compassionate care, as well as a lack of

professional mentoring for new CCNs. The cycle is perpetuated and the perils forecasted of the CCNs critical shortage, merits the attention of all stakeholders.

The Nursilience self-care intervention was aimed at CCNs gaining self-awareness and mindfully focusing on self-care as a moderator for building resilience. Although the project was inconclusive, it provides an attempt to apply prior nursing science to an identified nursing practice and patient care problem. The project has potential for replication without time constraints and modifications. The replication could implement to its' fullest for CCNs' self-care application and evaluation for efficacy in a geographical or global trial.

### **Summary**

The Nursilience DPI project was directed at the identified nursing science gap discovered in a global CCNs shortage crisis. The current research literature was expansive on the causation of an advanced practice CCN's attrition that is vital to the care of critically ill patients. Without empirical studies on the implementation of therapeutic interventions, whether theoretical or evidence-based, the problem continues to need further attention. A comprehensive literature review revealed the problem to be multifaceted, with burnout (PPI) as the conclusive leading cause of CCNs' attrition. Focusing on the growing prevalence of PPI and the research for building resilience to assist the CCNs to cope and adapt to adverse stress led to the conception of caring for the caregiver. Self-reflection and self-awareness of emotional wounds and PPI led to the conception of self-care and self-compassion for healing self and others.

The PPI and the adverse effects on CCNs' interprofessional relationships in professional and personal life reflected the scars of the walking wounded. A CCN's pain may be projected on others in the profession of caring. The natural correlation with the wounded healer theory and personal adult resilience was evident. Also, self-efficacy and social learning theories were clearly

apt to the project. With self-care and self-efficacy, the walking wounded was transformed to the wounded healer, supporting the prospect of building resilience for coping and adapting with adverse stress. Adjunctively, it was proposed that extending self-care into the critical care environment would positively affect interprofessional relationships, professional quality of life, or intent to leave the critical care environment. The quantitative, cross-sectional direct improvement project was targeted to CCNs that practiced in adult critical care areas. The innovative, web-based self-care Nursilience intervention was multimodal and voluntary. The time to implement the intervention was decreased to meet academic time constraints. The pre- and post-Nursilience surveys were anonymously administered to evaluate for associate relationships for CCNs' self-care on CCNs' resilience. CCNs' resilience was measured by associated independent variables: compassion satisfaction, interprofessional relationships, professional quality of life, PPI, or intent to leave the critical care specialty area. The resulting statistics did not support the project's propositions. However, the intent of the project has potential for replication to further advance the study and expand on nursing science. The critically ill patient and their families require an ample number of experienced CCNs and HCPs that are psychologically and psychosocially healthy to render safe and quality care. CCNs' self-care and self-compassion must be attended to in order to provide the healing and compassionate care to a most vulnerable population of critically ill patients.

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## Appendix A

### Survey Instruments Partitioned in Nursilience Survey

**Table 27: Survey Instruments Partitioned in Nursilience Survey**

Independent Variable	Dependent Variable	Survey Instrument	Question #	Measurement	Validity/Reliability	Author/Permission
<b>Self-Care</b>	<b>Compassion Satisfaction</b>  <b>(PPI) Compassion Fatigue</b>  <b>(PPI) Burnout</b>  <b>Resilience</b>	Professional Quality of Life – Compassion Satisfaction and Fatigue Version 5  <b>PROQOL</b>	2-31 (30)	Measures the negative and positive effect of individuals caring for others that are experiencing trauma and suffering, and has <b>sub-scales for compassion satisfaction, burnout and compassion fatigue.</b>	Construct validity and reliability has been proven, as the PROQOL is one of the most frequently used instruments in over 200 published empirical papers. <b>The ProQOL has been reported as a reliable measure with Cronbach alpha, for each subscales as Compassion Satisfaction (CS =0.87), Compassion Fatigue (CF = 0.80, and Burnout (BO = 0.72).</b> The PROQOL has three subscales that measure the separate construct mean score of each 10 question subscale of the 30 Likert-style responses ranging from 0 (never) to 5 (very often)	© B. Hudnall Stamm, 2009-2012. Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). <a href="http://www.proqol.org">www.proqol.org</a> . This test may be freely copied as long as (a) author is credited, (b) no changes are made, and (c) it is not sold. Those interested in using the test should visit <a href="http://www.proqol.org">www.proqol.org</a> to verify that the copy they are using is the most current version of the test.
	<b>Inter-personal Relations</b>  <b>Professional Quality of Life</b>  <b>(PPI) Incivility</b>	<b>Interpersonal Conflict at Work Scale (ICAWS)</b>	32-35 (4)	Assessment of how well participants get along with others at work and will be used to gauge <b>the incivility and work conflict</b> of the CCN work	<b>Internal consistency reliability, coefficient alpha is a reported average of .74 across 13 studies.</b>	The ICAWS can be used free of charge for noncommercial educational and research purposes. The ICAWS is copyright © 1997, Paul E. Spector and Steve M. Jex, All rights reserved

				environment.		
	<b>Compassion Satisfaction</b>	<b>Organizational Workload Inventory (QWI)</b>	36-38 (3)	Assess <b>quantity of work the CCN perceived as an added stressor.</b>	The QWI is reported to have <b>average internal consistency reliability, coefficient alpha of .82 across 15 studies.</b>	QWI can be used free of charge for noncommercial educational and research purposes. The ICAWS is copyright © 1997, Paul E. Spector and Steve M. Jex, All rights reserved
	<b>Intent to Leave</b>		39 (1)	<b>One question added to explore intent to leave.</b>		
	<b>Categorical Variables:</b>	<b>Demo-graphic Question-naire</b>	40-49 (10)	Gender, age, years as a CCN, critical care area, years in current area, Nursing education, ethnicity (optional), marital status, shift, average time spent in intervention program.	Categorical Data Each participant will have ID # for comparison of pre- and post-survey data collected.	N/A
	<b>Gender</b>					
	<b>Age</b>					
	<b>Ethnicity (optional)</b>					
	<b>Years as CCN</b>					
	<b>Critical Care area of practice</b>					
	<b>Length of time in current Critical Care area</b>					
	<b>Shift worked</b>					
	<b>Time spent in inter-vention program</b>					

## Appendix B

### Nursilience Self-Care Resilience Interventional Curriculum

### Nursilience Self-Care Resilience Interventional Curriculum

<https://sites.google.com/site/nursiliency/home>

<p>Module 1: Welcome and Introduction: Information of how stress impacts the neuroscience of stress and its physiological effects, and learning about the upside of stress. How one can make stress work for personal growth. Dr. Kelly McGonigal video and e-book.</p> <p>The CCN will gain knowledge of how to transition stress into a positive for personal growth.</p> <p>Article: Zerubavel, N. &amp; Wright, M. (2012). The dilemma of the wounded healer. <i>Psychotherapy</i>, 49(4), 482-491. <a href="http://dx.doi.org/10.1037/a002782">http://dx.doi.org/10.1037/a002782</a></p> <p>e-book: McGonigal, K. (2015). The upside of stress: Why stress is good for you and how to get good at it. <a href="http://kellymcgonigal.com/books/">http://kellymcgonigal.com/books/</a></p>	<p>Module 2: Assess Your Stress: Taking a personal inventory through reflection and feedback for coping with personal stressors.</p> <p>The CCN will have the opportunity to assess their stress from many different perspectives through tool resources found at: <a href="http://faculty.weber.edu/molpi/healthclasses/110/bookchapters/selfassessmentchapter.htm">http://faculty.weber.edu/molpi/healthclasses/110/bookchapters/selfassessmentchapter.htm</a></p> <p>May measure stress from a variety of perspectives including:</p> <ul style="list-style-type: none"> <li>· Physiological indicators of stress</li> <li>· Your perception of what is happening in your life</li> <li>· Sources of stress and frequency of hassles</li> <li>· Your level of satisfaction with events in your life</li> <li>· Type of life events you have experienced</li> </ul> <p>The CCN will have the information to develop a personal plan to help reduce stress and enhance quality of life.</p>
<p>Module 3: Recognize Your Stressors: Assists participants in recognizing their own symptoms of stress in response to their personal stressors in their work life and personal life.</p> <p><a href="https://youtu.be/yUHfw_wfVJ8">https://youtu.be/yUHfw_wfVJ8</a></p> <p>Resource links include: <a href="http://psychcentral.com/lib/recognizing-and-dealing-with-stress/">http://psychcentral.com/lib/recognizing-and-dealing-with-stress/</a></p> <p><a href="http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-management/art-20044151">http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-management/art-20044151</a></p> <p><a href="http://www.humanstress.ca/stress/understand-your-stress/recognize-your-stress.html">http://www.humanstress.ca/stress/understand-your-stress/recognize-your-stress.html</a></p> <p>The CCN will learn how to develop</p>	<p>Module 4: Self-Care &amp; Self-Compassion: Self-care, and self-compassion media resources.</p> <p>Video: The Space Between Self-Esteem and Self-Compassion by Dr. Kristin Neff from <a href="http://self-compassion.org/">http://self-compassion.org/</a></p> <p>Self-care strategies and overall stress reduction: <a href="https://www.verywell.com/self-care-strategies-overall-stress-reduction-3144729">https://www.verywell.com/self-care-strategies-overall-stress-reduction-3144729</a></p> <p>Self- Care strategies for making room for self-care and own critical care needs to find calm and inner strength: <a href="https://www.psychologytoday.com/collections/201406/self-care-strategies">https://www.psychologytoday.com/collections/201406/self-care-strategies</a></p> <p>Self-care strategies for dealing with stress, trauma and crisis: <a href="http://crisisclinic.org/find-help/crisis-line/self-care-strategies/">http://crisisclinic.org/find-help/crisis-line/self-care-strategies/</a></p>

<p>personal strategies to manage stress in their professional and personal lives.</p>	<p>The CCN will be able to apply self-care strategies to their self and gain resources for self-help.</p>
<p>Module 5: Reflection in the Mirror: A self-reflective exercise for decentering, and positive reappraisal, photo voice digital reflective journal activity, and two articles: Personal Values: The HeArt of Holistic Nursing (Marcus, 2016). Building Positive Resources: Effects of Positive Events and Positive Reflection on Work Stress and Health (Bono, Glomb, Shen, Kim, &amp; Koch, 2013). Authentic-Self.com resources at: <a href="http://www.authentic-self.com/self-reflection.html">http://www.authentic-self.com/self-reflection.html</a> The CCN will gain skills for designing a digital reflective journal and a mindfulness reflective strategy for making positive changes in self.</p>	<p>Module 6: Your Mental Fitness: Information on the psychological and psychosocial impairments of accumulated stress and burnout, compassion fatigue, PTSD, and the related behaviors on their personal life and professional life. Audio from Christopher Reeve from Husband, Father, and Superman – Nothing is Impossible at: <a href="https://soundcloud.com/simonschuster/nothing-is-impossible-audio">https://soundcloud.com/simonschuster/nothing-is-impossible-audio</a>  Caught Inside Our Bodies – a reflection on identity: <a href="http://compassionateselfcare.com/caught-inside-our-bodies/">http://compassionateselfcare.com/caught-inside-our-bodies/</a>  What is Resilience? Coping with Crisis: <a href="https://www.verywell.com/what-is-resilience-2795059">https://www.verywell.com/what-is-resilience-2795059</a>  Three articles: Predictors of Compassion Fatigue and Compassion Satisfaction in Acute Care Nurses (Kelly, Runge, &amp; Spencer). Beyond Burnout: What is Compassion Fatigue? (Lampert, 2015). Burnout and Resilience Among Nurses Practicing in High-Intensity Settings (Rushton, Batcheller, Schroeder, &amp; Donohue (2015).</p>
<p>Module 7: Intentional Care - Building Resilience Video: Nursing Resiliency <a href="https://youtu.be/s0BQeVxPtG4">https://youtu.be/s0BQeVxPtG4</a>  Cultivating Resilience – Greg Eells at: <a href="https://youtu.be/eLzVJVM1BUc">https://youtu.be/eLzVJVM1BUc</a>  Resource Links: <a href="http://www.nursetogether.com/how-can-nurses-build-resilience-and-master-stress">http://www.nursetogether.com/how-can-nurses-build-resilience-and-master-stress</a>  <a href="http://www.nursetogether.com/bounce-back-resilience-nursing">http://www.nursetogether.com/bounce-back-resilience-nursing</a>  Two articles: Feasibility and Acceptability of a Resilience Training Program for Intensive Care Unit Nurses (Mealer et al., 2014). The Power of Self-Care to Transform Culture, Improve Retention, and Boost</p>	<p>Module 8: Find work-life balance. Learn part of self-care is maintaining a positive and healthy environment in both work and personal life. Maintaining a work-life balance is critical to the CCN self-care.  Self-efficacy and advocacy in peer-mentoring for healthy workplace relational communication to decrease workplace stress with positivity.  to practice chosen self-care and self-compassion exercises to improve work-life balance.  At the end of week eight the follow-up Resilience survey will be administered.  Video: 2 Minute Tips: Breaking an addiction to Technology <a href="https://youtu.be/mQmKFI9y4U8">https://youtu.be/mQmKFI9y4U8</a>  Resource Link: <a href="http://www.helpguide.org/articles/stress/stress-at-work.htm">http://www.helpguide.org/articles/stress/stress-at-work.htm</a></p>

<p>Resilience (Richards, 2014).</p> <p>The CCN will be able to practice some simple exercises in daily life to improve resilience.</p>	<p>Numerous articles.</p>
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## Appendix C

### GCU IRB Approval Letter



GRAND CANYON  
UNIVERSITY™

3300 West Camelback Road, Phoenix Arizona 85017 602.639.7500 Toll Free 800.800.9776 www.gcu.edu

DATE: December 5, 2016

TO: Barbara Ward, MSN-Ed, RN

FROM: Grand Canyon University Institutional Review Board

STUDY TITLE: [952686-1] Nurse Resilience: Implications on Critical Care Nurse Shortage and Proposed Intervention

IRB REFERENCE #: 952686-1

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: December 5, 2016

REVIEW CATEGORY: Exemption category # [7.2]

Thank you for your submission of New Project materials for this research study. Grand Canyon University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Cynthia Bainbridge at [REDACTED] or [cynthia.bainbridge@gcu.edu](mailto:cynthia.bainbridge@gcu.edu). Please include your study title and reference number in all correspondence with this office.

cc:



## Appendix D

### ProQOL Permission Letter

ProQOL.org

HOME

THEORY

PROQOL MEASURE & TOOLS

PRESENTATION AIDS

USE THE PROQOL

PROQOL DATABANK

RESOURCE LINKS

FAQ

ABOUT US

CONTACT US

VOLUNTEER

#### Permission Letters

Thank you for completing the form for permission to use the ProQOL. This page provides access to permission letters. It also specifies the terms of use.

Please read the [FAQs](#) if you have questions about use. Most of the time you will find your answer there.

If you wish to use the ProQOL for non-commercial purposes, simply download the Permission to use the ProQOL form below. The form you submitted will be on record with our office so that we will know you requested permission. Make sure to keep a copy of the information you submitted with your use permission form. Together, the information you submitted and this page are your permission. These letters alone are not sufficient without a copy of the use permission form.

In the spirit of helping others, we assume that you will use the ProQOL for good. By submitting your form and downloading the permissions, you agree to the following conditions.

- You agree to always use the ProQOL or work associated with it in an ethical manner appropriate to human rights policies of the United Nations including *The United Nations Universal Declaration of Human Rights*. You may have other requirements based on your setting such as permission from a Human Subjects committee such as is common at Universities. The ProQOL.org does not have a Human Subjects review process. You must find that locally.
- You agree to always use the ProQOL in culturally sensitive ways.
- If you collect data, you agree to manage and protect your data the legal and ethical management of data in your employment, training or volunteer setting. For example, if you are from the United States or a European country doing research in a developing nation, you will be held to the procedures of your organization in the United States or European country.
- You, or someone with whom you work, will not profit directly from selling the ProQOL or products that rest in large part on the ProQOL. The ProQOL can be freely used as part of a school course, training curriculum or in a book or journal when it is not the substantial part of the work.
- We encourage you to review and use the Best Practices Parameters from the International Society for Traumatic Stress Studies. To find more about these, go to the International Society for Traumatic Stress Studies website at [www.istss.org](http://www.istss.org). Among others there are parameters for [Trauma Research](#) and [Teaching and Training about Trauma](#), and [International Training Guidelines](#).

I wish you the very best as you use the ProQOL. Please do consider donating a copy of your data. You can find more information about data donations at the [Donate Data](#) page on the ProQOL site.

Beth Hudnall Stamm  
Developer and Director, [ProQOL.org](http://ProQOL.org)

#### Permission to Use ProQOL – This permission must accompany any other permissions

**Additional Permissions** – Make sure that you have the above *Permission to Use* letter above.

##### Permission for Wordings Changes

Most wording changes do not need additional permission. Here are the guidelines for permission to edit wording changes. You may substitute the appropriate target group for / [helper] / if that is not the best term. For example, if you are working with teachers, replace / [helper] / with teacher. Word changes may be made to any word in italicized square brackets to make the measure read more smoothly for a particular target group. *You may not substantially change the wording of a question because it may negate the known reliabilities and validates of the measure.*

##### Permission for Format Changes

No additional permission is needed to change the format of the ProQOL such as re-typing it to fit into a training package or for accommodating a disability or language. You may not change the format to provide a public online form that returns a score to an end user. If you wish to do this type of application, it falls under the *Permission to Reprint* below. You may put the ProQOL in a format that returns the score to a user for research or training as long as the link is not publicly advertised. Here is the guidance for format changes. *You are granted permission to convert the ProQOL into other formats such as a computerized or taped version for the visually impaired.* If you are required to provide documentation for changing words to make the measure more appropriate to your target population, provide the requester this page and the *Permission to Use* letter from above.

##### Permission to Translate

You will find the existing translations at [measures page](#). They may be of use to you as your work on your translation. If you are updating one of the older versions of the ProQOL to the current, v5 version, you can find the line-out comparison of the IV to 5 on the [Measures Page](#). Any translations or translation improvements you can offer would be graciously accepted. When you finish your translation, I hope you will send a copy to us so that we can post it for others to use.

## Appendix E

### Interpersonal Conflict at Work Scale, ICAWS

Interpersonal Conflict at Work Scale, ICAWS. Interpersonal conflict in the workplace has been shown to be one of the most frequently reported job stressors (e.g., Keenan & Newton, 1985). The ICAWS is a four item, summated rating scale designed to assess this construct. It's items ask about how well the respondent gets along with others at work, specifically getting into arguments with others and how often others act nasty to the respondent. Five response choices are given, ranging from less than once per month or never, coded 1, to several times per day, coded 5. High scores represent frequent conflicts with others, with a possible range from 4 to 20. Internal consistency reliability (coefficient alpha) was reported by Spector and Jex (1998) to average .74 across 13 studies. Interpersonal Conflict at Work Scale, ICAWS. Each of the four items has five response choices, numbered from 1 to 5. Sum the responses to each item, which will yield a total score from 4 to 20.

<http://shell.cas.usf.edu/~pspector/scales/icawspage.html>

Note: The ICAWS can be used free of charge for noncommercial educational and research purposes. The ICAWS is copyright © 1997, Paul E. Spector and Steve M. Jex, All rights reserved.

Page last modified April 27, 2014.

Spector, P. E., & Jex, S. M. (1998). Development of Four Self-Report Measures of Job Stressors and Strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology*, 3, 356-367. (All: describes development of the scales.)

## Appendix F

### SurveyMonkey Authorization Letter



SurveyMonkey Inc.  
[www.surveymonkey.com](http://www.surveymonkey.com)

For questions, visit our Help Center  
[help.surveymonkey.com](http://help.surveymonkey.com)

**Re: Permission to Conduct Research Using SurveyMonkey**

To whom it may concern:

This letter is being produced in response to a request by a student at your institution who wishes to conduct a survey using SurveyMonkey in order to support their research. The student has indicated that they require a letter from SurveyMonkey granting them permission to do this. Please accept this letter as evidence of such permission. Students are permitted to conduct research via the SurveyMonkey platform provided that they abide by our Terms of Use, a copy of which is available on our website.

SurveyMonkey is a self-serve survey platform on which our users can, by themselves, create, deploy and analyze surveys through an online interface. We have users in many different industries who use surveys for many different purposes. One of our most common use cases is students and other types of researchers using our online tools to conduct academic research.

If you have any questions about this letter, please contact us through our Help Center at [help.surveymonkey.com](http://help.surveymonkey.com).

Sincerely,

**SurveyMonkey Inc.**



## Appendix G

### SurveyMonkey Nursilience Survey

**Dear Potential Research Participant:** You are being invited to participate in a research project being conducted by Barbara Ward. I am a current Doctorate in Nursing Practice (DNP) student at Grand Canyon University (GCU) conducting a Direct Practice Improvement (DPI) Project for Critical Care Nursing as part of the required project dissertation process. The DNP Project is being directly supervised by my DNP Chair and GCU Faculty, Dr. Heidi Schmoll. Participation in this study is completely voluntary, and you may refuse to participate or decide to stop at any time without consequence.

**Description:** The purpose of the current study is to explore the factors contributing to stress and resiliency in Critical Care Nurses

related to the global critical care nurse shortage. The study consists of this questionnaire and an innovative web-based self-care program. Information about the project is provided to obtain Informed Consent as a voluntary participant at the bottom of the page by checking a box of agreement to participate. The agreement to participate is required in order for the participant to continue. This questionnaire will be administered to obtain a baseline measurement of different concepts related to self-care, self-compassion, self-efficacy, coping strategies, social support, stress, work-life balance, assessment of work environment, and relational communication. All data will be anonymous and kept confidential.

**Risks:** The amount of risk caused is expected to be minimal. Included in this study are some personal and sensitive questions about yourself and past experiences. You may find these types of questions to cause some distress. If you experience any distress or discomfort during the study, you can stop at any time.

**Benefits:** By completing this survey and participating in the Nursilience Self-Care Intervention, the primary benefit is the potential for a personal gain in self and knowledge of self-care, self-compassion. There is an added potential to personally design and achieve an improved personal and professional work-life well-being and balance.

**Time:** The survey will take approximately 20-30 minutes to complete. There is an innovative web-based multimodal self-care intervention program 'NURSILIENCE' that participants will gain entrance to at the end of the survey. The program is self-paced and designed to NOT add to a critical care nurse's stress. The Google website will be accessed only by consenting participants that will receive the link on completion of this survey. This will be only a two-week study to gauge if just focal awareness for self-care has an impact on personal well-being. There are eight modules and resources that can be explored at your own pace. The aim is to take a minimum of 10-30 minutes a day to focus only on you! At the end of the two-week period the survey will be repeated.

**Voluntary Participation and Right to Withdraw:** Your participation is completely voluntary. You can withdraw from the study at any time without penalty.

**Confidentiality:** All information gathered during this study will be anonymous.

**Informed Consent**

\* 1. I have read information and agree to participate in the Nursilience project.

- Yes

**PROFESSIONAL QUALITY OF LIFE SCALE (PROQOL) COMPASSION SATISFACTION AND COMPASSION FATIGUE (PROQOL) VERSION 5 (2009).**

When you care for people you have direct contact with their lives. As you may have found, your compassion for those you care for can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a Critical Care Nurse. 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.

2. I am happy.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

3. I am preoccupied with more than one person I care for.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

4. I get satisfaction from being able to give care to people.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

5. I feel connected to others.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

6. I jump or am startled by unexpected sounds.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

7. I feel invigorated after working with those I gave care to.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

8. I find it difficult to separate my personal life from my life as a critical care nurse.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

9. I am not as productive at work because I am losing sleep over traumatic experiences of a person I cared for.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

10. I think that I might have been affected by the traumatic stress of those I cared for.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

11. I feel trapped by my job as a critical care nurse.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

12. Because of my critical care nursing, I have felt "on edge" about various things.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

13. I like my work as a critical care nurse.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

14. I feel depressed because of the traumatic experiences of the people I have given care to.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

15. I feel as though I am experiencing the trauma of someone I have given care to.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

16. I have beliefs that sustain me.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

17. I am pleased with how I am able to keep up with critical care nursing techniques and protocols.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

18. I am the person I always wanted to be.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

19. My work makes me feel satisfied.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)

- ☐ Often (4)
- ☐ Very Often (5)

20. I feel worn out because of my work as a critical care nurse.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

21. I have happy thoughts and feelings about those I given care to and how I could help them.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

22. I feel overwhelmed because my case [work] load seems endless.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

23. I believe I can make a difference through my work.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

24. I avoid certain activities or situations because they remind me of frightening experiences of the people I have cared for.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

25. I am proud of what I can do to give critical care nursing.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)



26. As a result of my critical care nursing, I have intrusive, frightening thoughts.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

27. I feel "bogged down" by the system.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

28. I have thoughts that I am a "success" as a critical care nurse.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

29. I can't recall important parts of my work with trauma victims.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

30. I am very caring person.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

31. I am happy that I chose to do this work.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

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[www.proqol.org](http://www.proqol.org). This test may be freely copied as long as (a) author is credited, (b) no changes are made, and (c) it is not sold. Those

interested in using the test should visit [www.proqol.org](http://www.proqol.org) to verify that the copy they are using is the most current version of the test.

Assessment of interpersonal relations at work, incivility and intent to leave.

#### Interpersonal Conflict at Work (ICAW) & Organizational Workload Inventory (QWI)

32. How often do you get into arguments with others at work?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

33. How often do other people yell at you at work?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

34. How often do other people do nasty things to you at work?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

35. How often are people rude to you at work?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

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#### Organizational Workload Inventory (QWI)

36. How often do you find it difficult or impossible to do your job because of interruptions by other people?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)

☐ Very Often (5)

37. How often do you find it difficult or impossible to do your job because of conflicting job demands?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

38. How often do you find it difficult or impossible to do your job because of inadequate help from others?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

39. Have you actively looked for other employment?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Quite Often (4)
- ☐ Very Often (5)

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## DEMOGRAPHICS

40. Are you male or female?

- ☐ Male
- ☐ Female

41. What is your age?

- ☐ 17 or younger
- ☐ 18-20
- ☐ 21-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60 or older

42. What is the highest level of school you have completed or the highest degree you have received?

- ☐ Associate degree

- Bachelor degree
- Graduate degree

43. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian

or other Pacific islander, or some other race?

- White
- Black or African-American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or other Pacific Islander
- From multiple races
- Some other race (please specify)

44. How many years have you been a Critical Care Nurse?

- ☐ 1-2 (1)
- ☐ 3-5 (2)
- ☐ 6-8 (3)
- ☐ 9-12 (4)
- ☐ 13-16 (5)
- ☐ 17-20 (6)
- ☐ >20 (7)

45. Select the Critical Care area that most closely describes the area you work in.

- ☐ Medical ICU (1)
- ☐ Surgical ICU (2)
- ☐ Cardiac ICU (3)
- ☐ Neuro ICU (4)
- ☐ Open Heart ICU (5)
- ☐ Trauma ICU (6)

Non-Critical Care

46. How many years have you worked in the Critical Care area selected above?

- ☐ 1-2 (1)
- ☐ 3-4 (2)
- ☐ 5-6 (3)
- ☐ 7-8 (4)
- ☐ 9-10 (5)
- ☐ >10 (6)

47. Marital Status

- ☐ Married (1)
- ☐ Widowed (2)
- ☐ Divorced (3)
- ☐ Separated (4)
- ☐ Never married (5)

48. Shift most often worked

- ☐ Day 7AM-7PM (1)
- ☐ Night 7PM-7AM (2)
- ☐ Other (3) \_\_\_\_\_

49. Average participation time in intervention program modules.

- ☐ Daily (1)
- ☐ 4-6 times a week (2)
- ☐ 2-3 times a week (3)
- ☐ Once a week (4)
- ☐ Never (5)

Congratulations on the completion of the Nursilience Survey, and thank you for your

participation in this very worthwhile project - YOU and your Self-care. Please copy and paste

URL into browser to access Nursilience Self-Care program website:

<https://sites.google.com/site/nursiliency/home>

Thank You

Table 1

*Demographics - Age - Nursilience Survey 1*

Answer Choices		Responses		
17 or younger (1)		0.00%	0	
18-20 (2)		0.00%	0	
21-29 (3)		12.24%	6	
30-39 (4)		8.16%	4	
40-49 (5)		20.41%	10	
50-59 (6)		38.78%	19	
60 or older (7)		20.41%	10	
Total			49	
Basic Statistics				
Minimum 3.00	Maximum 7.00	Median 6.00	Mean 5.47	Standard Deviation 1.25

Table 2

*Demographics – Age - Nursilience Survey 2*

Answer Choices		Responses		
17 or younger (1)		0.00%	0	
18-20 (2)		0.00%	0	
21-29 (3)		7.69%	3	
30-39 (4)		20.51%	8	
40-49 (5)		17.95%	7	
50-59 (6)		25.64%	10	
60 or older (7)		28.21%	11	
Total			39	
Basic Statistics				
Minimum	Maximum	Median	Mean	Standard Deviation
3.00	7.00	6.00	5.46	1.30

Table 3

*Demographics- Gender Nursilience Survey 1*

Answer Choices		Responses	
Male (1)		8.16%	4
Female (2)		91.84%	45
<b>Total</b>			<b>49</b>

Basic Statistics				
<b>Minimum</b> 1.00	<b>Maximum</b> 2.00	<b>Median</b> 2.00	<b>Mean</b> 1.92	<b>Standard Deviation</b> 0.27

Table 4

*Demographics- Gender Nursilience Survey 2*

Answer Choices		Responses	
Male (1)		5.13%	2
Female (2)		94.87%	37
<b>Total</b>			<b>39</b>

Basic Statistics				
<b>Minimum</b> 1.00	<b>Maximum</b> 2.00	<b>Median</b> 2.00	<b>Mean</b> 1.95	<b>Standard Deviation</b> 0.22

Table 5

*Demographics- Marital Status Nursilience Survey 1*

Answer Choices		Responses	
☞ Married (1)		46.94%	23
☞ Widowed (2)		2.04%	1
☞ Divorced (3)		20.41%	10
☞ Separated (4)		2.04%	1
☞ Never married (5)		28.57%	14
<b>Total</b>			<b>49</b>

Table 6

*Demographics- Marital Status Nursilience Survey 2*

Answer Choices		Responses	
↳ Married (1) (1)		66.67%	26
↳ Widowed (2) (2)		0.00%	0
↳ Divorced (3) (3)		15.38%	6
↳ Separated (4) (4)		2.56%	1
↳ Never married (5) (5)		15.38%	6
Total			39

Basic Statistics				
Minimum 1.00	Maximum 5.00	Median 1.00	Mean 2.00	Standard Deviation 1.52

Table 7

*Demographics- Nursing Education Level – Degree Nursilience Survey 1*

Answer Choices	Responses	
Associate degree	44.90%	22
Bachelor degree	28.57%	14
Graduate degree	26.53%	13
<b>Total</b>		<b>49</b>

Table 8

*Demographics- Nursing Education Level – Degree Nursilience Survey 2*

Answer Choices		Responses	
Associate degree (1)		25.64%	10
Bachelor degree (2)		48.72%	19
Graduate degree (3)		25.64%	10
Total			39

Basic Statistics				
Minimum 1.00	Maximum 3.00	Median 2.00	Mean 2.00	Standard Deviation 0.72



Table 9

*Demographics- Ethnicity Nursilience Survey 1*

Answer Choices		Responses		
White (1)		87.76%	43	
Black or African-American (2)		6.12%	3	
American Indian or Alaskan Native (3)		0.00%	0	
Asian (4)		0.00%	0	
Native Hawaiian or other Pacific Islander (5)		0.00%	0	
From multiple races (6)		2.04%	1	
Total			49	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 1.00	Mean 1.41	Standard Deviation 1.37

Table 10

*Demographics- Ethnicity Nursilience Survey 2*

Answer Choices		Responses	
White (1)		76.92%	30
Black or African-American (2)		2.56%	1
American Indian or Alaskan Native (3)		0.00%	0
Asian (4)		0.00%	0
Native Hawaiian or other Pacific Islander (5)		0.00%	0
From multiple races (6)		17.95%	7
Total			39

Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 1.00	Mean 2.08	Standard Deviation 2.07

Table 11

*Demographics- Years as Critical Care Nurse Nursilience Survey 1*

Answer Choices		Responses		
↳ 1-2 (1) (1)		10.20%	5	
↳ 3-5 (2) (2)		6.12%	3	
↳ 6-8 (3) (3)		14.29%	7	
↳ 9-12 (4) (4)		10.20%	5	
↳ 13-16 (5) (5)		12.24%	6	
↳ 17-20 (6) (6)		12.24%	6	
↳ >20 (7) (7)		34.69%	17	
Total			49	
Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 5.00	Mean 4.84	Standard Deviation 2.08

Table 12

*Demographics- Years as Critical Care Nurse Nursilience Survey 2*

Answer Choices		Responses	
↳ 1-2 (1) (1)		7.69%	3
↳ 3-5 (2) (2)		12.82%	5
↳ 6-8 (3) (3)		5.13%	2
↳ 9-12 (4) (4)		7.69%	3
↳ 13-16 (5) (5)		17.95%	7
↳ 17-20 (6) (6)		12.82%	5
↳ >20 (7) (7)		35.90%	14
Total			39

Basic Statistics				
Minimum 1.00	Maximum 7.00	Median 5.00	Mean 4.97	Standard Deviation 2.06

Table 13

*Demographics- Adult Critical Care Unit Type Nursilience Survey 1*

Answer Choices		Responses	
↳ Medical ICU (1) (1)		28.57%	14
↳ Surgical ICU (2) (2)		12.24%	6
↳ Cardiac ICU (3) (3)		10.20%	5
↳ Neuro ICU (4) (4)		2.04%	1
↳ Open Heart ICU (5) (5)		2.04%	1
↳ Trauma ICU (6) (6)		4.08%	2
Non-Critical Care (7)		40.82%	20
Total			49

Basic Statistics				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	7.00	3.00	4.12	2.65

Table 14

*Demographics- Adult Critical Care Unit Type Nursilience Survey 2*

Answer Choices		Responses	
↳ Medical ICU (1) (1)		20.51%	8
↳ Surgical ICU (2) (2)		15.38%	6
↳ Cardiac ICU (3) (3)		7.69%	3
↳ Neuro ICU (4) (4)		0.00%	0
↳ Open Heart ICU (5) (5)		5.13%	2
↳ Trauma ICU (6) (6)		12.82%	5
Non-Critical Care (7)		38.46%	15
Total			39

Basic Statistics				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	7.00	6.00	4.46	2.52

Table 15

*Demographics- Years in Current Critical Care Unit Nursilience Survey 1*

Answer Choices		Responses	
↳ 1-2 (1) (1)		12.24%	6
↳ 3-4 (2) (2)		12.24%	6
↳ 5-6 (3) (3)		6.12%	3
↳ 7-8 (4) (4)		12.24%	6
↳ 9-10 (5) (5)		4.08%	2
↳ >10 (6) (6)		53.06%	26
<b>Total</b>			<b>49</b>
Basic Statistics			
<b>Minimum</b> 1.00	<b>Maximum</b> 6.00	<b>Median</b> 6.00	<b>Mean</b> 4.43
			<b>Standard Deviation</b> 1.91

Table 16

*Demographics- Years in Current Critical Care Unit Nursilience Survey 1*

Answer Choices		Responses	
↳ 1-2 (1) (1)		12.82%	5
↳ 3-4 (2) (2)		15.38%	6
↳ 5-6 (3) (3)		10.26%	4
↳ 7-8 (4) (4)		5.13%	2
↳ 9-10 (5) (5)		10.26%	4
↳ >10 (6) (6)		46.15%	18
<b>Total</b>			<b>39</b>
Basic Statistics			
<b>Minimum</b> 1.00	<b>Maximum</b> 6.00	<b>Median</b> 5.00	<b>Mean</b> 4.23
			<b>Standard Deviation</b> 1.94

Table 17

*Demographics- Shift Nursilience Survey 1*

Answer Choices	Responses
↳ Day 7AM-7PM (1) (1)	57.14% 28
↳ Night 7PM-7AM (2) (2)	26.53% 13
↳ Other (3) _____ (3)	16.33% 8
<b>Total</b>	<b>49</b>

Basic Statistics				
<b>Minimum</b> 1.00	<b>Maximum</b> 3.00	<b>Median</b> 1.00	<b>Mean</b> 1.59	<b>Standard Deviation</b> 0.75

Table 18

*Demographics- Shift Nursilience Survey 2*

Answer Choices	Responses
↳ Day 7AM-7PM (1) (1)	60.53% 23
↳ Night 7PM-7AM (2) (2)	28.95% 11
↳ Other (3) _____ (3)	10.53% 4
<b>Total</b>	<b>38</b>

Basic Statistics				
<b>Minimum</b> 1.00	<b>Maximum</b> 3.00	<b>Median</b> 1.00	<b>Mean</b> 1.50	<b>Standard Deviation</b> 0.68

Figure 1

*Demographics- Average Time in Nursilience Self-Care Program Survey*

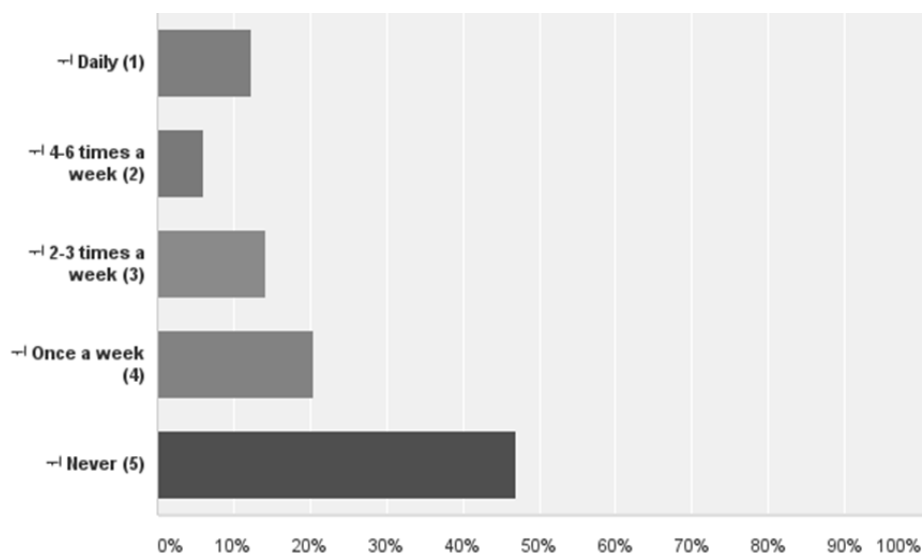


Figure 2

*Demographics- Average Time in Nursilience Self-Care Program Survey 2*

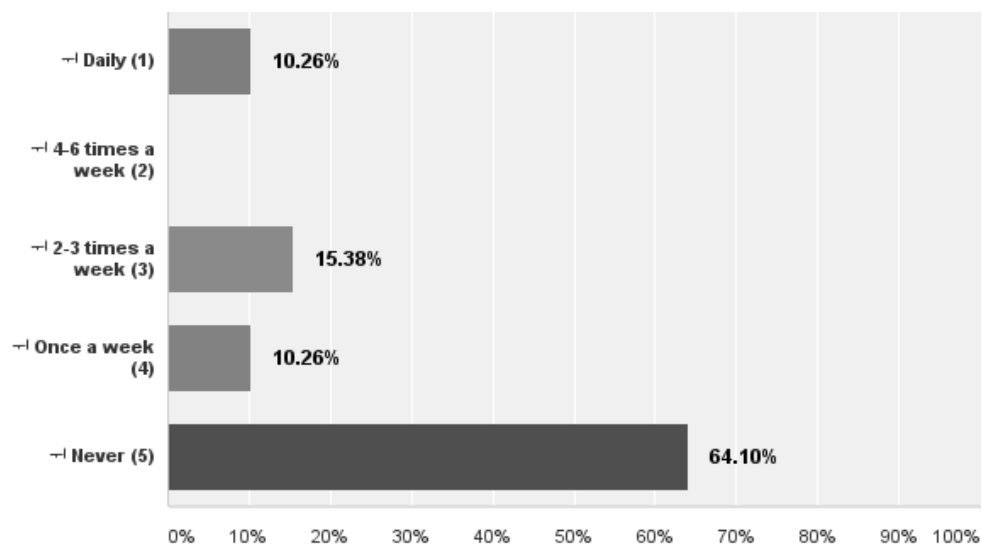


Table 21

*Intent to Leave – Nursilience Survey 1*

Answer Choices		Responses		
↳ Never (1) (1)		16.33%	8	
↳ Rarely (2) (2)		36.73%	18	
↳ Sometimes (3) (3)		30.61%	15	
↳ Quite Often (4) (4)		8.16%	4	
↳ Very Often (5) (5)		8.16%	4	
Total		49		
Basic Statistics				
Minimum 1.00	Maximum 5.00	Median 2.00	Mean 2.55	Standard Deviation 1.11

Table 22

*Intent to Leave – Nursilience Survey 2*

Answer Choices		Responses		
↳ Never (1) (1)		25.64%	10	
↳ Rarely (2) (2)		20.51%	8	
↳ Sometimes (3) (3)		43.59%	17	
↳ Quite Often (4) (4)		5.13%	2	
↳ Very Often (5) (5)		5.13%	2	
Total		39		
Basic Statistics				
Minimum 1.00	Maximum 5.00	Median 3.00	Mean 2.44	Standard Deviation 1.08

Figure 3

*Paired T-Test***Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
PPair 1	Respondent ID	6040825088.000	50	1179326.23200	166781.91520
		0			
	US Region	4.8800	50	2.43813	.34480

**Paired Samples Correlations**

		N	Correlation	Sig.
	RespondentID & US Region	50	.171	.234
Pair 1				

**Paired Samples Test**

		Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)
PPair 1	RespondentID - US Region	6041160244.0000	36219.918	49	.000