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### Exploring Affects of Critical Care Work Environments on Professional Quality of Life

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Exploring Affects of Critical Care Work Environments on Professional Quality of Life

Marissa Monroe

Scholarly Project Advisor: Dr. Elizabeth Morse

Scholarly Project Team Member: Dr. Erin Shankel and Mrs. Susan Marti

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### **Abstract**

Burnout and compassion fatigue among critical care nurses can affect individual patients, healthcare systems, and nurses' health and wellbeing. Both burnout and compassion fatigue have been well described in the literature as key elements that contribute to a nurse's overall professional quality of life, and can be directly influenced by the health of the nurses' work environment. The AACN defined six standards of a healthy work environment, which include skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership. The purpose of this project is to explore which of the AACN Healthy Work Environment standards have the strongest impact on professional quality of life. This project was an exploratory, cross-sectional survey design completed by critical care nurses at the University of Tennessee Medical Center. The ProQOL questionnaire and AACN Healthy Work Environment Assessment tool were used to measure professional quality of life and adherence to the AACN Healthy Work Environment standards. The survey was created through Qualtrics and distributed through employer-based emails. The mean score for compassion satisfaction was average at 52.05, burnout was closer to high at 55.3, and STS was high at 63. The composite average of all six AACN Healthy Work Environment standards was good at 3.5. A multiple regression analysis revealed true collaboration, effective decision-making, and authentic leadership as significant predictors of compassion satisfaction. Authentic leadership was the only predictor of burnout. Appropriate staffing, meaningful recognition, and authentic leadership were predictors of secondary traumatic stress. Authentic leadership was the strongest predictor of compassion satisfaction, burnout, and STS. Therefore, improving leadership should be a priority in ICUs that wish to improve nurses' professional quality of life.

**Keywords:** Professional Quality of Life, Healthy Work Environment, Critical Care

### Exploring Effects of Critical Care Work Environments on Professional Quality of Life

Few elements have as many negative effects on critical care nurses as burnout. It develops gradually and can manifest as a chronic syndrome (Smart et al., 2013; Wentzel & Brysiewicz, 2014; Young et al., 2011). Symptoms of burnout can affect individual patients, healthcare systems, and nurses' wellbeing. Burnout can become irreversible, decreasing nurses' ability to care for patients. These situations can result in increased infection rates, medication errors, pressure ulcers, and falls (Djukic, Kovner, Brewer, Fatehi & Greene, 2014; Peltier & Dahl, 2009; Sekol & Kim, 2014). Patient satisfaction is also decreased among nurses suffering from burnout (American Association of Critical Care Nurses, 2016c; Burtson & Stichler, 2010; Jha, Orav, Zheng & Epstein, 2008; McHugh, Kutney-Lee, Cimiotti, Sloane & Aiken, 2011; Peltier & Dahl, 2009; Sekol & Kim, 2014).

Entire healthcare organizations can also be compromised. High burnout levels among critical care nurses may lead to increased turnover, decreased productivity, absenteeism and low morale as well as increased sharps injuries (American Association of Critical Care Nurses, 2016a; Branch & Klinkenberg, 2015; Hunsaker, Chen, Maughan, & Heaston, 2014; Mason et al., 2014; Meadors & Lamson, 2008; Sekol & Kim, 2014; Smart et al., 2013; Thommasen et al., 2002; Van Mol et al., 2015; Young et al., 2011). Additionally, ICU nurses can suffer emotionally from burnout. Exhaustion, depression, anger, and disengagement may all result from burnout (Branch & Klinkenberg, 2015; Hunsaker, Chen, Maughan, & Heaston, 2014; Mason et al., 2014; Meadors & Lamson, 2008; Smart et al., 2013; Van Mol et al., 2015; Young et al., 2011). These symptoms can lead to poor attitudes and job detachment (American Association of Critical Care Nurses, 2016a; Sekol & Kim, 2014; Thommasen et al., 2002).

Burnout has been described as a work related occupational hazard among helping professions such as nursing (Hooper, Craig, Janvrin, Wetsel & Reimels, 2010; Mason et al., 2014; Sacco et al., 2015; Smart et al., 2013; Wentzel & Brysiewicz, 2014; Young et al., 2011). Working in a high stress environment, like an Intensive Care Unit (ICU), tends to increase the likelihood of burnout. Because of this correlation, ICU nurses, also referred to as critical care nurses, are at an increased risk of burnout (Kim, Yates, Graham, & Brown, 2011; Markwell, Polivka, Morris, Ryan, & Taylor, 2015; Mason et al., 2014; Meadors & Lamson, 2008; Myhren et al., 2013; Sacco et al., 2015; Todaro-Franceschi, 2015; Van Mol et al., 2015; Young et al., 2011). Young, Cicchilli, and Bressler (2011) found 16% of floor nurses and 86% of emergency room nurses experience burnout, but critical care nurses had higher rates than both of these areas. Mason et al. (2014) found burnout rates of 90% among ICU nurses.

Burnout is one element of a construct introduced by Beth Stamm called professional quality of life (Branch & Klinkenberg, 2015, ProQOL, 2016; Sacco, Ciurzynski, Harvey & Ingersoll, 2015; Todaro-Franceschi, 2015). Professional quality of life is comprised of compassion satisfaction and compassion fatigue (Figure 1). Burnout and secondary traumatic stress (STS) are the two elements of compassion fatigue.

A key factor of professional quality of life is work environment (Figure 2), which also predicts job satisfaction (American Association of Critical Care Nurses, 2016c; Begat, Ellefsen, & Severinsson, 2005; Breau & Rheume, 2014; Kerlin et al., 2014; Lambrou, Merkouris, Middleton, & Papastavrou, 2014; Liu et al., 2012; Mason et al., 2014; McHugh et al., 2011; Myhren, Ekeberg, & Stokland, 2013; Peltier & Dahl, 2009; Sacco et al., 2015; Tunlind, Granstrom, & Engstrom, 2015). Studies show work environment affects whether nurses can complete tasks without interruptions, communicate with coworkers, have access to needed

supplies, and deliver quality care (Djukic et al., 2014). Breau and Rheaume (2014) found that work environments directly affect job satisfaction among ICU nurses.

Environmental factors also affect professional quality of life (Kohler, 2010; Sekol & Kim, 2014). Workplace settings with low staffing, chaotic work environments, poor administrative support, and demanding patients or families have all been correlated with high burnout scores (Amin, Vankar, Nimbalkar, & Phatak, 2015; Kim et al., 2011; Mason et al., 2014; Meadors & Lamson, 2008; Sacco et al., 2015; Van Mol et al., 2015; Wentzel & Brysiewicz, 2014; Young et al., 2011). Unhealthy work environments can result in increased turnover, decreased productivity, absenteeism, and physical exhaustion (Mason et al., 2014; Sacco et al., 2015). Myhren et al. (2013) found that ICU nurses are predisposed to burnout due to the high acuity level of ICU patients. Additionally, high stress ICU environments further increase the risk of compassion fatigue.

National organizations are attempting to combat these negative environmental elements by promoting healthy work environments (American Association of Critical Care Nurses, 2016c; Sekol & Kim, 2014). The American Association of Critical Care Nurses (AACN) healthy work environment initiative seeks to improve work environments by understanding factors that affect them. These factors include the physical environment, as well as interactions between nurses, patients, colleagues, and organizations. The AACN created six standards for a healthy work environment to improve these factors (Figure 3). In order to assess a work environment's adherence to these six standards, the AACN created the Healthy Work Environment Assessment Tool (American Association of Critical Care Nurses, 2016c). This tool can be used to predict nursing satisfaction by assessing work environments. However, it is unknown how the domains captured by the tool are correlated with professional quality of life.

### **Problem Statement**

Professional quality of life greatly influences nursing satisfaction, which in turn impacts patient outcomes and patient satisfaction (American Association of Critical Care Nurses, 2016a; American Association of Critical Care Nurses, 2016c; Burtson & Stichler, 2010; Jha et al., 2008; Kohler, 2010; McHugh et al., 2011; Peltier & Dahl, 2009; Sekol & Kim, 2014; Thommasen et al., 2002). Low professional quality of life results in decreased patient outcomes, increased mortality rates, low patient satisfaction, decreased patient safety, and reduced quality of care (Kim et al., 2011; Mason et al., 2014; Sacco et al., 2015). Entire organizations, and the patients in their care, are compromised when nurses work with compassion fatigue, jeopardizing finances, quality of care, and public health. Because the quality of nursing care is the most influential factor in patients returning to the same hospital, organizations must address professional quality of life to be successful (Branch & Klinkenberg, 2015; Burtson & Stichler, 2010).

Professional quality of life results from patient environment, personal environment, and work environment. Work environments, like ICUs, are the settings in which nurses provide care. The AACN created six healthy work environment standards to improve ICU work environments, however, the relationship between adherence to these standards and nurse's professional quality of life has not been studied.

### **Purpose**

This project seeks to identify what specific factors within an ICU nurse's work environment affect professional quality of life. The AACN Healthy Work Environment initiative defines six domains of a healthy work environment (American Association of Critical Care Nurses, 2016b). This project will assess the relationship between the Healthy Work



Environment Assessment tool results and ProQOL scores. By assessing how each of the AACN standards correlate with compassion satisfaction and compassion fatigue, it can be determined which environmental components have the strongest impact on professional quality of life. The results of this study may inform quality improvement initiatives aimed at improving nurses' professional quality of life by prioritizing policies that promote and sustain a healthy work environment. Hospitals can use this information to determine how compliance to the AACN's Healthy Work Environment standards might improve nurses' professional quality of life by improving compassion satisfaction and reducing compassion fatigue.

### **Review of Evidence**

Currently, the literature reveals demographic inconsistencies in ICU professional quality of life scores (Mason et al., 2014; Young et al., 2011). Variations in scores occur according to shift length, age, years of experience, years in current unit, education, marital status, religion, type of unit, workload, shift time and gender (Amin et al., 2015; Hunsaker et al., 2014; Kim et al., 2011; Mason et al., 2014; Sacco et al., 2015; Sekol & Kim, 2014; Smart et al., 2013; Young et al., 2011). Further exploration of these demographics may help identify factors that contribute to compassion satisfaction and compassion fatigue. Identifying demographic factors may lead to increased awareness, understanding and treatment of compassion satisfaction and compassion fatigue, improving professional quality of life.

In 2001 the AACN recognized that ineffective employee relationships were contributing to unhealthy work environments (American Association of Critical Care Nurses, 2016b). Patient care suffers when nurses are unwilling or unable to interact with other healthcare professionals. Organizations can combat this by creating and sustaining healthy work environments through collaboration and leadership. Encouraging nurses to develop effective relationships could

decrease medical errors, stress among coworkers, turnover, and burnout as well as improve patient care (American Association of Critical Care Nurses, 2016b).

The AACN created six healthy work environment standards that guide organizations in creating healthy work environments (Figure 2). These six standards, along with clinical excellence, can improve patient outcomes. The standards were developed by a nine-person panel, reviewed by 50 experts and align with the Code of Ethics for Nurses as well as the core competencies endorsed by the National Academy of Medicine (American Association of Critical Care Nurses, 2016b). The six essential standards include skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership (American Association of Critical Care Nurses, 2016b).

### **Skilled Communication**

The AACN recognizes communication as a crucial element in providing excellent patient care (American Association of Critical Care Nurses, 2016b). Effective communication should occur between providers, nurses, management, auxiliary staff, and other healthcare professionals as well as patients and their families (American Association of Critical Care Nurses, 2016b; Kohler, 2010; Rushton, Reina & Reina, 2007; Thornby, 2006). Communication skills include finding solutions, achieving outcomes, fostering collaborative relationships, considering all relevant perspectives, maintaining respect and accountability, and becoming competent in appropriate communication technologies through written, spoken and nonverbal forms of communication (American Association of Critical Care Nurses, 2016b).

To develop, improve and maintain communication skills, nurses must feel safe, respected, and free from environmental constraints (American Association of Critical Care Nurses, 2016b; Rushton et al., 2007; Thornby, 2006). Ineffective relationships, high stress

levels, anger, intimidating behavior and disrespect all create unhealthy work environments which can result in negative communication, patient harm, increased errors, nurse withdrawal, sentinel events and lack of teamwork (American Association of Critical Care Nurses, 2016b; Kohler, 2010; Rushton et al., 2007). However, improving communication, especially with supervisors and peers, can significantly improve nurse satisfaction as well as patient outcomes (Djukic et al., 2014; Kohler, 2010). Studies show that strong communication skills improve compassion satisfaction and reduce compassion fatigue (Poncet et al., 2007; Sacco et al., 2015; Von Mol et al., 2015). Bhutani, Bhutani, Balhara, and Kalra (2012) found that clinicians who received communication training were less likely to experience burnout. Other studies stated that poor communication in ICUs is a major cause of burnout (Maytum, Heiman, & Garwick, 2004; Van Mol et al., 2015).

Similarly, skilled communication with patients, families, and staff can improve critical care nurses' professional quality of life. Staff communication is assessed by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), which highlights the connection between nurse communication and patient care (Hooper et al., 2010). Good communication builds trusting relationships essential to compassionate care (Rushton et al., 2007; Von Mol et al., 2015). These types of relationships provide job fulfillment in stressful ICU environments.

Hospitals can help nurses develop communication skills in a variety of ways. Organizations can offer training that focuses on self-awareness, dialogue, conflict resolution, negotiation, listening, and advocacy (American Association of Critical Care Nurses, 2016b). Hospitals can also create zero tolerance environments, establish communication processes,

perform evaluations, and review staff performance to improve work place communication (American Association of Critical Care Nurses, 2016b; Rushton et al., 2007).

### **True Collaboration**

True collaboration is a process built over time between different professions (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Clements, Dault, & Priest, 2007; Despina, 2009). In ICUs, nurses, respiratory therapists, phlebotomists, physicians, nurse managers, nurse educators, nursing assistants, and administrative assistants must all work together to ensure optimal care of complex patients. Each discipline must be proficient within its own role as well as respect the knowledge and skill of other professions. Each team member needs to exhibit skilled communication, knowledge, trust, shared responsibility, mutual respect, coordination, and optimism for interdisciplinary collaboration to be successful (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Boev & Xia, 2015; Despina, 2009; Laschinger, 2007; Rushton et al., 2007; Schmalenberg & Kramer, 2007).

Ninety percent of nurses believe collaboration is one of the most important factors to a healthy work environment, and employee collaboration is a predictor of nurse job satisfaction (Boev & Xia, 2015; Kohler, 2010). Poor relationships within the workplace are a source of significant stress. This is especially true when nurses experience verbal abuse from physicians, patients, families, or other nurses (Kohler, 2010; Laschinger, 2007; Rowe & Sherlock, 2005). Nurses rate collaboration with front line managers and administrators as poor (Ulrich, Lavandero, Woods & Early, 2014). However, stress decreases when nurses are able to openly discuss patient issues with colleagues (Bogat et al., 2005). True collaboration can reduce workplace stress, increase job satisfaction, decrease burnout, as well as improve patient

satisfaction and patient outcomes (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Boev & Xia, 2015; Buerhaus et al., 2007; Clements et al., 2007; Despina, 2009; Kohler, 2010; Kramer & Schmalenberg, 2008; Rosenstein & O'Daniel, 2008; Sacco et al., 2015; Schmalenberg & Kramer, 2007; Ulrich et al., 2006). All of these elements may improve professional quality of life.

Nurses must continuously work to develop collaboration skills since they are often at the center of patient care. These skills include role competence, personal integrity, integrating individual differences, encouraging contribution, and being committed to a sustained culture of collaboration (American Association of Critical Care Nurses, 2016b; Clements & Helmer, 2007). Hospitals can help foster an environment of collaboration by providing access to ethics committees, interprofessional education, dispute resolution, and ensuring nursing authority (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Clements et al., 2007; Despina, 2009; Matthews & MacDonald-Rencz, 2007).

### **Effective Decision Making**

Effective decision-making reflects the importance of nurse involvement when making policy, directing care, and leading organizational operations. Critical care nurses are in constant contact with their patients while providing daily care. This unique viewpoint allows ICU nurses to gather, filter, interpret, and transform patient data into valuable information that is not available to other members of the healthcare team (American Association of Critical Care Nurses, 2016b). These contributions have potential to improve patient care delivery. Evidence shows patient outcomes improve when nurses are included in making decisions (American Association of Critical Care Nurses, 2016b).

Studies also show that including nurses in decision making improves nurse job satisfaction, productivity, and retention (American Association of Critical Care Nurses, 2016b; Kohler, 2010; Nicklin & Barton, 2007). These studies show that shared decision-making and autonomy protect against burnout and increases nurse job satisfaction as well as compassion satisfaction (Fernandez, Gascon, Lagos, Rubio, & Asenjo, 2007; Hunsaker et al., 2014; Sacco et al., 2015). One study revealed that burnout is reduced when management promotes involvement in unit decisions (Maytum et al., 2004). Hooper et al. (2010) found that nurses experience powerlessness when managers do not involve nurses in making unit decisions. Another study found that autonomy was more important than salary when recruiting nurses (McManis & Monslave Associates, 2003). National programs such as the AACN Beacon Award for Excellence, the Malcom Baldrige National Quality Program, and the American Nurses Credentialing Center Magnet Recognition Program support and encourage nurse involvement (American Association of Critical Care Nurses, 2016b).

Excluding nurses from decision-making can result in dissatisfaction, feelings of powerlessness, stress, low retention, increased errors, and higher costs (American Association of Critical Care Nurses, 2016b; Hooper et al., 2010). Therefore, it should be a joint responsibility between individual nurses and organizations to improve autonomy. Nurses can improve their autonomy by acquiring necessary skills, mastering relevant content, and assessing situations accurately (American Association of Critical Care Nurses, 2016b). Hospitals can foster nurse autonomy by encouraging nurses to participate in decision-making, teaching collaborative decision-making strategies, openly communicating with team members, facilitating unit based decisions, establishing a decision making process, and objectively evaluating decisions (American Association of Critical Care Nurses, 2016b; Shirey, 2006).

### **Appropriate Staffing**

Appropriate staffing refers to matching patient needs to the competencies and skills of nurses (American Association of Critical Care Nurses, 2016b). Any imbalance between the two can endanger patients. Evidence reveals an increase of serious complications and death when there are fewer nurses to meet patient care needs (American Association of Critical Care Nurses, 2016b; Buerhaus et al., 2007; McCauley & Irwin, 2006; McMannis and Monslave Associates, 2003; Oandasan, 2007; Schmalenberg & Kramer, 2007; Shamian & El-Jardali, 2007; Ulrich et al., 2014). Kohler (2010) found that poor staffing and high patient acuity resulted in the inability to provide quality patient care. Shamian and El-Jardali (2007) described a 3-12% reduction in adverse patient outcomes in hospitals that implemented appropriately higher nurse staffing rates. Tourangeau et al. (2006) found that increasing nurse staffing by 10% resulted in six fewer deaths per 1,000 discharged patients.

Staffing imbalances also impact nurses' wellbeing. High patient loads can overwork and overstress nurses, which leads to dissatisfaction and burnout (American Association of Critical Care Nurses, 2016b; Grinspun, 2007; Kohler, 2010; Maytum et al., 2004; McCauley & Irwin, 2006; Milliken, Clements, & Tillman, 2007; Sacco et al., 2015; Schmalenberg & Kramer, 2007; Sekol & Kim, 2014; Ulrich et al., 2014; Young et al., 2011). McMannis and Monslave Associates (2003) stated that as the nursing shortage increased, nurses stress levels rose from having to frequently orient travel nurses and new employees, manage a rapid turnover of patients, and care for critically ill patients. Shamian and El-Jardali (2007) found that hospitals with low staffing ratios experienced higher rates of needle-stick injuries. Kohler (2010) found a 23% increase in burnout and job dissatisfaction among nurses with high patient to nurse ratios. Another study revealed that 48.1% of nurses intending to leave their job were doing so due to

poor staffing (Ulrich et al., 2014). Therefore, inappropriate staffing lowers not only patient outcomes and the organization's bottom line, but professional quality of life as well.

Conversely, addressing unsatisfactory staffing ratios may improve professional quality of life. To accomplish this, hospitals must first understand ICU environments. Needleman, Buerhaus, Mattke, Stewart, and Selevinsky (2002) found that 19.4% of American ICUs have inadequate staffing levels due to high patient turnover. They concluded that staffing assignments should not be based on ratios due to the quickly fluctuating condition of critically ill patients. Assigning ICU nurses a set number of patients with no regard to acuity endangers patients (American Association of Critical Care Nurses, 2016b; McMannis & Monslave Associates, 2003; Schmalenberg & Kramer, 2007).

Labor unions and nurses' organizations support the push for adequate staffing (Kohler, 2010). Nurses can help provide adequate staffing by participating in organizational staffing processes. Health care organizations can ensure adequate staffing by implementing ethical staffing policies, regularly evaluating patient outcomes, encouraging nurse involvement in staffing processes, increasing technology effectiveness, and supporting nurses in ways that allows them to focus on patient care (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Sekol & Kim, 2014).

### **Meaningful Recognition**

Meaningful recognition is another essential component of healthy work environments, as confirmed by three consecutive AACN critical care nurse environment surveys (American Association of Critical Care Nurses, 2016b). Meaningful recognition should exist as a cultural norm within the workplace. It is an ongoing process, not a single event. Therefore, recognition programs require formal structure and processes (American Association of Critical Care Nurses,



2016b). Gallagher and Gormley (2009) found that 33.3% of nurses believe management could support staff better through improved recognition. Another study revealed that among nurses intending to leave their job, 47.6% would reconsider if they received more respect from management (Ulrich et al., 2014). Hunsaker, Chen, Maughan, and Heaston (2014) proposed that nursing job satisfaction is precisely associated with recognizing nurses' contributions. McClelland and Vogus (2014) found that rewarding compassionate care leads to nurses taking satisfaction in their caregiving. These studies suggest recognition should come in the form of respect and acknowledgement instead of rewards alone (Kohler, 2010).

Ulrich et al. (2006) found that 45.9% of nurses indicated that patients and families provided the most meaningful recognition, 26% said other nurses provided the most meaningful recognition, and less than 10% said their organization provided the most meaningful recognition. In organizations that do not provide recognition, nurses are more likely to experience stress, emotional exhaustion, and leave (Kohler, 2010; Ulrich et al., 2006). Lack of recognition can lead to stress, burnout, compassion fatigue, and decreased job satisfaction (American Association of Critical Care Nurses, 2016b; Kohler, 2010; Laschinger, 2007; McMannis & Monslave Associates, 2003; Milliken et al., 2007; Sacco et al., 2015; Smart et al., 2013; Ulrich et al., 2006). Another study found that burnout results when organizations do not meet nurses' recognition expectations (Ray, Wong, White, & Heaslip, 2013).

Knowing that the most meaningful recognition comes from patients and their families, followed by other nurses, supports the need for processes that enable patient driven recognition (Ulrich et al., 2006; Ulrich et al., 2014). Hospitals can improve nurse recognition by implementing processes that focus on nurse contributions, educating employees and patients on these recognition processes, ensuring recognition is meaningful, nominating nurses for

recognition at local, regional, and national levels, and regularly evaluating recognition programs (American Association of Critical Care Nurses, 2016b).

### **Authentic Leadership**

Nursing leaders include managers, educators, clinical leaders, administrators, and advanced practice nurses. These leaders are significant components of healthy work environments, and are the key to staff retention and satisfaction. Poor leadership and management can increase stress and burnout by setting unrealistic expectations of staff, failing to address ongoing problems, and not involving staff in unit decisions (Hooper et al., 2010; Ray et al., 2013; Sacco et al., 2015; Shamian & El-Jardali, 2007). Ulrich, Lavandero, Woods, and Early (2014) found that 51.8% of ICU nurses planning to leave their job would likely stay with better management.

Correlations also exist between supportive management and improved professional quality of life (Kohler, 2010; Hunsaker et al., 2014; Sacco et al., 2015). Strong management can improve environments and lower burnout rates by being present, increasing staff support, implementing shared decision making, and recognizing nurse efforts (Kohler, 2010; Hunsaker et al., 2014; Sacco et al., 2015). A supportive, interactive manager can improve the ICU environment and increase nurse job satisfaction (Bogat et al., 2005; Breau & Rheume, 2014; Lambrou et al., 2014; Liu et al., 2012; McHugh et al., 2011; Myhren et al., 2013; Peltier & Dahl, 2009; Sacco et al., 2015; Spetz & Herrera, 2010). Hunsaker et al. (2014) found that compassion satisfaction scores increased as managers were more attentive and involved.

Nurses perceive their work environments as stressful, which can decrease nursing job satisfaction and quality of patient care. Studies show that nurse empowerment in ICU settings has improved work environments (Breau & Rheume, 2014; Lambrou et al., 2014; McHugh et

al., 2011). It allows nurses to feel in charge of their practice and provides adequate organizational support to that practice. Empowerment can help nurses cope with a high patient mortality and morbidity, ethical dilemmas, and physician interaction, and thus decrease burnout (Breau & Rheume, 2014). Nurses are also more engaged in empowering work environments (Peltier & Dahl, 2009). Nurse managers play an important role in improving nurse empowerment.

Nurse leaders should embrace healthy work environments and encourage others to do the same. However, the 2013 AACN critical care nurse work environment survey revealed that nurses do not believe management is working to achieve healthy work environments (American Association of Critical Care Nurses, 2016b). Ulrich et al. (2014) found that 69.6% of nurse managers were familiar with the AACN healthy work environment standards; yet, only 22.2% were fully implementing them on their unit. Low adherence to healthy work environment standards may result when nurse leaders do not have adequate organizational support. Nurse leaders should be skilled communicators, team builders, and collaborators with skill in self-knowledge, strategic vision, and risk taking (American Association of Critical Care Nurses, 2016b). Hospitals can provide management support through education, appropriate role placement, financial assistance, a mentoring program, and regular evaluation (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Clements et al., 2007; McMannis & Monslave Associates, 2003; Ulrich et al., 2014).

### **Theoretical Model**

Due to its unique viewpoint of environment, the Theory of Compassion Satisfaction-Compassion Fatigue (CS-CF) was used as a framework to guide this project. The Theory of CS-CF is an explanatory, middle range theory developed by Dr. Beth Stamm in 2010 (Nursing

Theories, 2012; Stamm, 2010). The Theory of CS-CF Model illustrates the theory's concepts and assumptions (Figure 2) (ProQOL, 2016a). This theory depicts the relationship between compassion satisfaction and compassion fatigue, describing how a balance between these two concepts creates a sustainable professional quality of life (Stamm, 2010).

Compassion satisfaction is the ability of effective caregivers to derive pleasure from their work (Stamm, 2005). It refers to all the positive elements that nurses may experience caring for another person (ProQOL, 2016b; Sacco et al., 2015; Stamm, 2010). It allows nurses to connect with their patients and experience fulfillment in knowing they have eased another person's suffering in some way. Young et al. (2011) state that this fulfillment rejuvenates nurses so they can thrive in their caring role. Compassion satisfaction is essential in counterbalancing the negative effects of compassion fatigue in ICU settings.

Compassion fatigue was first introduced in 1988 by Dr. Stamm who suggested it be considered a component of professional quality of life (Branch & Klinkenberg, 2015; ProQOL, 2016; Sacco, Ciurzynski, Harvey, & Ingersoll, 2015; Todaro-Franceschi, 2015). Since then, compassion fatigue has been described as a type of burnout to which caregivers are particularly susceptible and may occur as a secondary traumatic stress (STS) reaction (Branch & Klinkenberg, 2015; Sacco et al., 2015). Compassion fatigue includes all the negative aspects of caring for another person and results in the inability to care (ProQOL, 2016b; Sacco et al., 2015; Stamm, 2010; Van Mol, Kompange, Benoit, Bakker, & Nijkamp, 2015; Wentzel & Brysiewicz, 2014; Young, Cicchillo, & Bressler, 2011).

The first element of compassion fatigue is burnout. Pines and Aronson (1988) described burnout as mental, physical, and emotional exhaustion that results from extended involvement in emotionally demanding situations. Environmental stressors contribute to the gradual process of

burnout (Figley, 1995; Sacco et al., 2015; Stamm, 2005). Burnout is caused by exhaustion, frustration, or anger and can result in physical, emotional, behavioral, work related, or interpersonal symptoms (Figley, 1995; ProQOL, 2016b; Stamm, 2010).

The second element of compassion fatigue is STS. Charles Figley (1995) described secondary trauma as an event that occurs to one person but affects many. It causes caregivers to experience the emotional distress of their patients. Critical care nurses frequently encounter patients suffering from serious injury, acute medical crisis, or threatened death, subjecting them to STS through indirect exposure (Hunsaker et al., 2014; Sacco et al., 2015; Van Mol et al., 2015; Young et al., 2011). Secondary trauma is rare, however, symptoms develop quickly and can have a profound effect on those experiencing it (Figley, 1995; ProQOL, 2016b; Sacco et al., 2015; Stamm, 2005). Effects of secondary trauma are influenced by proximity, intensity, and duration of exposure to the patient's trauma. Caregivers suffering from secondary trauma often experience fear, helplessness, confusion, and isolation in addition to re-experiencing the traumatic event and suffering from avoidance, numbing, and persistent arousal (Branch & Klinkenberg, 2015; Burtson & Stichler, 2010; Figley, 1995; Meadors & Lamson, 2008; Smart et al., 2013; Stamm, 2005; Van Mol et al., 2015; Wentzel & Brysiewicz, 2014; Young et al., 2011).

This theory assumes that there are three environments impacting the development of compassion satisfaction and compassion fatigue. These environments, including work, client/person helped, and personal, can be used to describe the overall balance within a workplace (ProQOL, 2016b; Stamm, 2010). Work environment refers to the setting where care is provided and is influenced by organizational and task characteristics (Stamm, 2010). Consistent frustration with work environment is a direct contributor to burnout (Sacco et al., 2015). Client/person helped environment refers to elements of the patient environment (Stamm,

2010). Caregiving may expose nurses to patients who have experienced trauma, resulting in the development of STS (Figley, 1995; Sacco et al., 2015). The third environment, personal, acknowledges that caregivers' personal characteristics contribute to the development of compassion satisfaction and compassion fatigue (Stamm, 2010). For example, nurses with strong coping mechanisms may experience satisfaction from their work despite contact with trauma victims in poor work environments (Kohler, 2010).

### **Project Design**

This project was an exploratory, cross-sectional survey design. Demographic factors included age, gender, years in nursing, years in current unit, type of unit, type of visitation, education, management support, and time of shift. The independent variables were the AACN's healthy work environment standards. The dependent variables were ProQOL scores. Results were analyzed to determine how adherence to the AACN standards affected the domains of professional quality of life. This project was approved in separate reviews by both Belmont University IRB and the University of Tennessee Medical Center IRB.

### **Clinical Setting**

The University of Tennessee Medical Center is a 600 bed-facility in Knoxville, Tennessee and is the region's only Level 1 Trauma Center, academic medical center, comprehensive stroke center, and Magnet recognized hospital (The University of Tennessee Medical Center, 2014a). Data was collected in each of the University of Tennessee Medical Center's (UTMC) four critical care units.

The Trauma Surgical Intensive Care Unit (TSICU) admits patients who have experienced blunt force trauma resulting from falls or motor vehicle accidents (The University of Tennessee Medical Center, 2014b). These critically ill patients often receive blood and fluid resuscitation,

ventilation, dialysis, and multiple procedures. The Neuro Critical Care (NCC) admits patients experiencing stroke, seizures, brain tumors, spinal cord injuries, and traumatic brain injuries (The University of Tennessee Medical Center, 2014b). These patients receive complex treatment, including ventilation, fiber optic catheters and invasive cooling. The Medical Critical Care (MCC) is a 20-bed unit that admits critically ill patients suffering from a variety of medical diagnoses including respiratory failure, gastrointestinal bleeding, sepsis, renal failure, multisystem organ failure, and endocrine crisis (The University of Tennessee Medical Center, 2014b). The Cardiovascular Intensive Care Unit (CVICU) is a 24-bed unit that provides cardiovascular intensive care needs. Nurses working in CVICU care for patients who have undergone open heart surgery, aortic aneurysm repair, vascular surgery, therapeutic hypothermia, balloon pump therapy, continuous renal replacement therapy, myocardial infarction, or heart failure in addition to providing hemodynamic therapy (The University of Tennessee Medical Center, 2014c).

### **Project Population**

This project surveyed critical care nurses working in the TSICU, NCC, MCC, and CVICU at the University of Tennessee Medical Center. Critical care registry nurses may be assigned to work in any of the four units based on staffing needs. Inclusion criteria required all participants to be currently working in an adult critical care unit. Pediatric ICU and float nurses were excluded from the sample population. The projected sample size was 219 participants, which represents 68 in TSICU, 17 in NCC, 54 in MCC, 69 in CVICU, and 11 in critical care registry.

### **Data Collection Instruments**

Professional quality of life was measured using the ProQOL questionnaire, a valid and reliable tool with good construct validity that measures the three domains of professional quality of life, compassion satisfaction, burnout, and secondary trauma (ProQOL, 2016b). Each domain is categorized as low, average, or high. The ProQOL scale does not have a composite score. The Cronbach's Alpha value is 0.88 for compassion satisfaction, 0.75 for burnout, and 0.81 for compassion fatigue (Statistical Solutions, 2016). Inter-scale correlations show a 5% shared variance with burnout and 2% shared variance with secondary trauma (Statistical Solutions, 2016). The ProQOL questionnaire has been used in 50 published research papers on professional quality of life and 100,000 articles (ProQOL, 2016b).

The AACN Healthy Work Environment Assessment uses an 18-item Likert scale as a screening tool to evaluate work environments based on the six healthy work environment standards (American Association of Critical Care Nurses, 2016a). This tool assesses adherence to each standard with three questions (American Association of Critical Care Nurses, 2016a). Each standard is categorized as needs improvement, good, or excellent. The questionnaire has been reviewed for face validity and administered to two groups of 250 people, each sample showed reliability, internal consistency with identical factor structures, and a Cronbach's Alpha score of 0.8 or better (American Association of Critical Care Nurses, 2016a).

### **Data Collection Process**

A Qualtrics account was created and used for data collection, management, and storage (Qualtrics, 2016). The ProQOL questionnaire, Healthy Work Environment Assessment Tool, and demographic questions were uploaded into Qualtrics and prepared for dissemination. A single, reusable link was created to share with participants, allowing them to anonymously



access the survey. A pilot study was performed prior to survey distribution, which included 11 students in Belmont University's Doctor of Nursing Practice program.

Nurse managers of CVICU, TSICU, MCC, and NCC at UTMC were contacted through work emails and asked to endorse this scholarly project by encouraging their employees to participate in this online survey. The four nurse managers were emailed a brief description and purpose of the survey, consent information, and a link to the online survey. The nurse managers then forwarded the email to their employees, totaling 219 ICU nurses. Potential participants were notified that their participation was voluntary, and were asked to include an email address only if they wanted to be entered into a random drawing for a \$100 gift card. Informed consent was implied by nurses' completion of the survey. A reminder email was sent to the four nurse managers and forwarded to ICU nurses two weeks after survey initiation. The online survey was active for four weeks. Upon survey expiration, one random participant was chosen to receive the gift card. Participants were de-identified through unique numerical codes. Data was collected, managed, and stored in Qualtrics. SPSS was used to analyze data. Raw scores were compiled to assess absolute differences between populations. Frequencies, means, standard deviations, medians, and interquartile ranges were used as measures of prevalence.

### **Results**

Out of a possible 219 nurses, 44.7% responded, yielding a total sample of 98 participants. Participation rates among the different units were CVICU 39.8%, Registry 3.1%, MCC 19.4%, NCC 1%, and TSICU 25%. Participant demographics included female (72.4%), male (17.3%), day shift (39.8%), night shift (48%), diploma education (4.1%), associate's degree (11.2%), bachelor's degree (69.4%) and master's degree (4.1%). Seventy six percent of nurses felt they had adequate manager support while 11.2% did not (Table 1). Unit experience ranged between

0.33 and 31 years with an average of 4, nursing experience was between 0.5 and 46 years with an average of 8.7, and age ranged from 22 to 68 with an average of 33.8 years.

Raw compassion satisfaction, burnout, and STS scores were obtained and converted into standardized t scores per the ProQOL manual. Standardized t scores were further categorized as low (43 or less), average (around 50), or high (57 or more) according to Stamm's scoring thresholds (Stamm, 2010). Cut scores are also included for compassion satisfaction (25<sup>th</sup> percentile = 44, 50<sup>th</sup> percentile = 50, and 75<sup>th</sup> percentile = 57), burnout (25<sup>th</sup> percentile = 43, 50<sup>th</sup> percentile = 50, 75<sup>th</sup> percentile = 56), and STS (25<sup>th</sup> percentile = 42, 50<sup>th</sup> percentile = 50, 75<sup>th</sup> percentile = 56) (Stamm, 2010). The mean compassion satisfaction score was average at 52.05, falling just above the 50<sup>th</sup> percentile with a standard deviation (SD) of 7.93. The mean burnout score was closer to high at 55.3, falling just below the 75<sup>th</sup> percentile with a SD of 7.58. The mean STS score was high at 63, falling well above the 75<sup>th</sup> percentile with a SD of 7.52. The ProQOL manual found no statistical differences in mean scores across gender, age, unit experience, and nursing experience in previous data (Stamm, 2010).

The AACN healthy work environment assessment categorical thresholds include needs improvement (1.00-2.99), good (3.00-3.99), and excellent (4.00-5.00) (American Association of Critical Care Nurses, 2016a). The mean for standard one, skilled communication, was good at 3.59 with a SD of 0.73. The mean for standard two, true collaboration, was good at 3.54 with a SD of 0.75. The mean for standard three, effective decision-making, had the highest mean of all six standards, which was good at 3.82 with a SD of 0.57. Standard four, appropriate staffing, had the lowest mean of all six standards, which needs improvement at 2.99 with a SD of 0.96. The mean for standard five, meaningful recognition, was good at 3.25 with a SD of 0.80. The mean for standard six, authentic leadership, was good at 3.77 with a SD of 0.6. The composite

average of all six standards was 3.5, therefore, the overall environment fell within the good category.

A multiple regression analysis was performed on the three dependent variables (Table 2). With compassion satisfaction as the dependent variable, 32% of the variance (adjusted  $R^2 = 0.32$ ) was accounted for by the independent variables [ $F = 7.91, p < 0.05$ ], with true collaboration [ $B = .47, p < 0.05$ ], effective decision-making [ $B = -.30, p < 0.05$ ], and authentic leadership [ $B = .49, p < 0.05$ ] as significant predictors. When predicting burnout, 22% of the variance (adjusted  $R^2 = 0.22$ ) was accounted for by the independent variables [ $F = 5.01, p < 0.05$ ], with authentic leadership [ $B = -.41, p < 0.05$ ] as the only significant predictor. When predicting STS, 16% of the variance (adjusted  $R^2 = 0.16$ ) was accounted for by the independent variables [ $F = 3.74, p < 0.05$ ], with appropriate staffing [ $B = -.36, p < 0.05$ ], meaningful recognition [ $B = .37, p < 0.05$ ], and authentic leadership [ $B = -.53, p < 0.05$ ] as significant predictors. Skilled communication was the only standard that was not a significant predictor of professional quality of life.

Correlations were also performed among the healthy work environment standards and ProQOL scores (Table 3). Standard six, authentic leadership, had the strongest correlation with compassion satisfaction (0.52), burnout (-0.44), and STS (-0.31). Standard three, effective decision making, had the weakest correlation with compassion satisfaction (0.23) and burnout (-0.2), while standard two, true collaboration, had the weakest correlation with STS (-0.04).

### **Discussion**

Results reveal that ICU nurses at UTMC have average compassion satisfaction, high burnout, and high STS scores despite good adherence to the AACN Healthy Work Environment standards. Increasing adherence to excellent may improve professional quality of life. Authentic leadership had the strongest relationship with compassion satisfaction, burnout, and STS. True

collaboration, effective decision-making, appropriate staffing, and meaningful recognition also demonstrated statistically significant relationships to professional quality of life.

### **Professional Quality of Life Predictability**

There are no previous studies assessing the relationship between professional quality of life and the AACN healthy work environment standards. Understanding which elements of the environment most affect professional quality of life can help hospitals develop strategies to improve ProQOL scores by directly targeting compassion satisfaction, burnout, or STS. All environmental standards, except skilled communication, were statistically significant predictors of professional quality of life, supporting Stamm's Theory of CS-CF.

#### **Compassion Satisfaction.**

Authentic leadership, true collaboration, and effective decision-making were all found to be significant predictors of compassion satisfaction. Authentic leadership had the strongest relationship with compassion satisfaction, suggesting that strong nursing leaders are key to nurse retention and satisfaction. These findings are supported by current literature, suggesting that strong management can decrease stress as well as improve empowerment and nurse job satisfaction, which improves compassion satisfaction (Begat et al., 2005; Breau & Rheume, 2014; Hooper et al., 2010; Hunsaker et al., 2014; Lambrou et al., 2014; Liu et al., 2012; McHugh et al., 2011; Myhren et al., 2013; Peltier & Dahl, 2009; Ray et al., 2013, Sacco et al., 2015; Shamian & El-Jardali, 2007; Spetz & Herrera, 2010).

True collaboration was the second strongest predictor of compassion satisfaction. This data parallels previous studies showing how employee collaboration decreases stress and increases nurse job satisfaction (Begat et al., 2005; Boev & Xia, 2015; Kohler, 2010). It is essential in ICUs that multiple disciplines work together to ensure the best possible patient

outcomes. The University of Tennessee Medical Center is a large hospital with multiple disciplines collaborating at all times. Smaller hospitals may not have the same level of communication within their ICUs. Therefore, true collaboration's predictability of compassion satisfaction may be limited to this ICU environment. However, it can serve as an exemplar for other teaching hospitals. Further research should be performed to determine if these results are transferable to smaller hospitals or generalizable. Further research should also determine how quality improvement in interdisciplinary collaboration might improve compassion satisfaction for staff nurses.

Effective decision-making is the final predictor of compassion satisfaction. Effective decision-making has been shown to decrease stress and improve nurse job satisfaction, retention and compassion satisfaction (American Association of Critical Care Nurses, 2016b; Fernandez et al., 2007; Hooper et al., 2010; Hunsaker et al., 2014; Kohler, 2010; Nicklin & Barton, 2007; Sacco et al., 2015). This data suggests that lowering stress and increasing job satisfaction can improve compassion satisfaction among ICU nurses.

### **Burnout.**

Authentic leadership was the only significant predictor of burnout. This relationship exists as a negative correlation, burnout decreases as authentic leadership improves. This suggests that specific strategies, such as nurse empowerment and strong leadership, can decrease burnout in ICU nurses, which is consistent with evidence that supportive management improves stress, burnout and retention (Hooper et al., 2010; Kohler, 2010; Hunsaker et al., 2014; Ray et al., 2013; Sacco et al., 2015; Shamian & El-Jardali, 2007; Ulrich et al., 2014).

**Secondary Traumatic Stress.**

In this project, authentic leadership, appropriate staffing, and meaningful recognition were found to be negatively correlated, statistically significant predictors of STS. As with compassion satisfaction and burnout, authentic leadership was the strongest predictor of STS. Therefore, nursing leaders are central assets to healthy work environments (Hooper et al., 2010; Ray et al., 2013; Sacco et al., 2015; Shamian & El-Jardali, 2007). One element of strong leadership is the organization and allocation of resources to ensure nurses have what they need to care for critically ill patients, including emotional resources required to cope with the traumatic exposures that are inherent in the critical care work environment. Preparedness at a systems level decreases poor patient outcomes and protects nurses from feelings of inadequacy in high stress situations, which may buffer the impact of traumatic events on individual nurses, thereby lowering their experience of STS.

Appropriate staffing was the second strongest predictor of STS. Any imbalance between patient needs and nursing skills can endanger patients, resulting in serious complications or death (American Association of Critical Care Nurses, 2016b; Buerhaus et al., 2007; McCauley & Irwin, 2006; McMannis and Monslave Associates, 2003; Oandasan, 2007; Schmalenberg & Kramer, 2007; Shamian & El-Jardali, 2007; Ulrich et al., 2014). As poor patient outcomes increase so does nurses' exposure to secondary trauma. Also, because effects of STS are influenced by duration of exposure, nurses working in understaffed units may care for traumatized patients longer and more frequently (Stamm, 2010). Furthermore, overworked nurses may not have time to decompress and recover after traumatic exposure.

Meaningful recognition is the final predictor of STS. This correlation suggests that recognizing nurse efforts, which have been shown to increase compassion satisfaction, may

counterbalance the effects of STS (American Association of Critical Care Nurses, 2016b; Kohler, 2010; McClelland & Vogus, 2014; McMannis & Monslave Associates, 2003; Milliken et al., 2007; Sacco et al., 2015; Smart et al., 2013; Ulrich et al., 2006). Therefore, nurses that feel valued may have an increased resilience to STS.

### **Professional Quality of Life**

Despite the average compassion satisfaction scores, ICU nurses had above average burnout and STS scores. Critical care nurses working at UTMC do not have a balanced professional quality of life, suggesting that working in an ICU can increase burnout and STS. These findings are consistent with previous research stating that stressful ICU environments predispose nurses to burnout and STS (Kim, Yates, Graham, & Brown, 2011; Markwell, Polivka, Morris, Ryan, & Taylor, 2015; Mason et al., 2014; Meadors & Lamson, 2008; Sacco et al., 2015; Todaro-Franceschi, 2015; Van Mol et al., 2015; Young et al., 2011).

### **Healthy Work Environment Standards**

Standard one, skilled communication, was good at 3.59. This hospital employs multiple strategies to improve communication, including evaluations and reviewing staff performance. Employees are also taught to communicate using the Introduction, Situation, Background, Assessment, and Recommendation (ISBAR) format when communicating with other healthcare professionals. Nurses may choose to communicate through a paging system, direct phone call, or an online messaging system. Also, seventy six percent of nurses felt they had adequate management support, which is an important element of skilled communication. These practices have resulted in good communication, and are consistent with those suggested in the literature to improve skilled communication (American Association of Critical Care Nurses, 2016b; Rushton et al., 2007).

Standard two, true collaboration, was good at 3.54. Previous studies suggest shared responsibility and mutual respect may improve collaboration (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Boev & Xia, 2015; Despins, 2009; Clements et al., 2007; Despins, 2009; Laschinger, 2007; Matthews & MacDonald-Rencz, 2007; Rushton et al., 2007; Schmalenberg & Kramer, 2007). This hospital achieves collaboration through interdisciplinary rounds and an ethics committee. Rounds occur daily at the bedside and include a pharmacist, nurse, nurse manager, case manager, and physician.

Standard three, effective decision-making, was good at 3.82. This standard was rated highest, suggesting that this hospital has strong practices in place to promote nurse involvement when making policy, directing care, and leading organizational operations. This hospital has nine shared governance councils including Magnet, Advanced Practice Nurse, Coordinating, Leadership, Practice, Professional Development, Quality and Safety, Research, and Night Shift. These are hospital wide councils with nurse representatives from each department. Additionally, unit-based councils facilitate employee involvement within individual units. Previous studies have also suggested these strategies to improve effective decision-making (American Association of Critical Care Nurses, 2016b; Shirey, 2006).

Standard four, appropriate staffing, needs improvement at 2.99. Currently, staffing is based on average patient admission and length of stay. Nursing staff believes this method needs improvement, which supports previous research (American Association of Critical Care Nurses, 2016b; McMannis & Monslave Associates, 2003; Needleman et al., 2002; Schmalenberg & Kramer, 2007). Staffing based on numbers does not take patient acuity into account. Critical care patients receiving continuous renal replacement therapy (CRRT), mass transfusion,



hypothermia, or Impella therapy need a 1:1 nurse to patient ratio. An average staffing matrix does not account for 1:1 care or rapid turnover. These situations result in nurses having three patients, being pulled from other units, coming in on their off days, or the team leader taking patients. Currently, there are no organizational committees that support nurse participation. Encouraging nurse involvement in staffing decisions may improve ICU staffing (American Association of Colleges of Nurses, 2002; American Association of Critical Care Nurses, 2016b; Sekol & Kim, 2014).

Standard five, meaningful recognition, was good at 3.25. This hospital recognizes nurses in a variety of ways. Individual employees are recognized at the hospital level through the Guardian Angel, Exceptional People, and Nurse Excellence programs. Nurses are nominated at the regional level through the DAISY Award, and all unit employees are recognized at the national level through the AACN Beacon Award for Excellence. The majority of these awards occur through staff nomination, therefore, staff recognition could improve by increasing visitor awareness of nomination procedures. Also, ICU nurses may benefit from unit-based recognition (American Association of Critical Care Nurses, 2016b).

Standard six, authentic leadership, was good at 3.77. This score is supported by 76.5% of nurses who felt they had good support from the nurse manager. A good authentic leadership score and feelings of being supported suggests these nurses feel empowered by their nurse manager and hospital administration. Current strategies to improve nurse-management relationships include an online discussion platform called the Boardroom Buzz. Quarterly rounds are also performed, which entails the Senior Leadership Team visiting each department to discuss concerns and future plans. These scores can further improve if employees believe nurse

managers are striving to fully implement the AACN healthy work environment standards (Ulrich et al., 2004).

The composite average of all six standards was good at 3.5. Therefore, these ICUs have a healthy work environment. These findings are expected in a Magnet recognized hospital, which focuses on nursing excellence. In addition to increased nurse involvement in decision-making, this hospital has created an environment where nurses are supported by management, which differs from previous data (Ulrich et al., 2014). These relationships may be a result of the Magnet environment focused on improving nursing authority and work life.

However, there is room for improvement. None of the environmental standards were rated as excellent. Most ICUs continue to enforce restricted visitation, therefore, previous data may not be transferable to UTMC. This hospital has established an open visitation policy, which could account for the 3.5 overall rating. Nurses may not feel safe, respected, or free from constraints in these environments (American Association of Critical Care Nurses, 2016b; Kohler, 2010; Laschinger, 2007; Rowe & Sherlock, 2005; Rushton et al., 2007; Thornby, 2006). Further research should be performed to determine how ICU open visitation affects work environment.

### **Strengths and Limitations**

This project adds to the literature by further describing how work environment affects professional quality of life. Hospitals can set priorities and develop strategies to improve professional quality of life by understanding which specific environmental factors most affect compassion satisfaction, burnout, and STS. This project had management support, accounting for an overall response rate of 44.7%. Demographic characteristics revealed a wide range of unit experience, age, and nursing experience. Males accounted for 17.3%, which is a higher representation than previous studies.

However, 39.8% of participants worked in CVICU, resulting in data that may not be representative of all four units. Sampling bias may exist within this project. Because this survey was distributed through email, only nurses who routinely check their employee-based email had the opportunity to participate. A longitudinal design may strengthen data in future studies, allowing for serial measurement of ProQOL constructs rather than capturing such fluid constructs at one moment in time. The sample in this study represents the experiences of ICU nurses working in a large, Magnet Recognized, Level I Trauma Center with open visitation. The project leader strongly recommends replication of the assessment process for hospitals that are interested in setting priorities related to improving health work environment as a mechanism for improving professional quality of life.

### **Conclusion**

The results of this project can help hospitals prioritize implementation of and monitoring for compliance to the AACN Healthy Work Environment standards. Authentic leadership had the strongest relationship with compassion satisfaction, burnout, and STS. Therefore, improving leadership should be a priority in ICUs that wish to improve nurses' professional quality of life, which may result in decreased absenteeism and turnover. Management should understand the role and needs of bedside nurses, design systems to meet those needs, and create enthusiasm for maintaining the processes. Organizations should support management by providing resources needed to create healthy work environments.

Nurses at UTMC report high levels of burnout and STS. Authentic leadership is the only predictor for burnout, and the top predictor for STS. The second and third predictor for STS is appropriate staffing and meaningful recognition. Nurses rated compliance with appropriate staffing as needs improvement and meaningful recognition as good. Therefore, in addition to

improving authentic leadership, UTMC should focus on improving staffing to create a balanced work life. This can be accomplished by including bedside nurses in creating ethical staffing processes and tailoring staffing strategies with nurse preferences in mind.

Future implications include the development of specific strategies to improve adherence to each AACN Healthy Work Environment standard. Further research should be conducted to determine if improved adherence yields a cost savings for the hospital system by decreasing turnover and improving retention. Future research should also determine how ICU open visitation affects work environment. Additionally, future research should determine if these results are transferable to smaller hospitals or generalizable.

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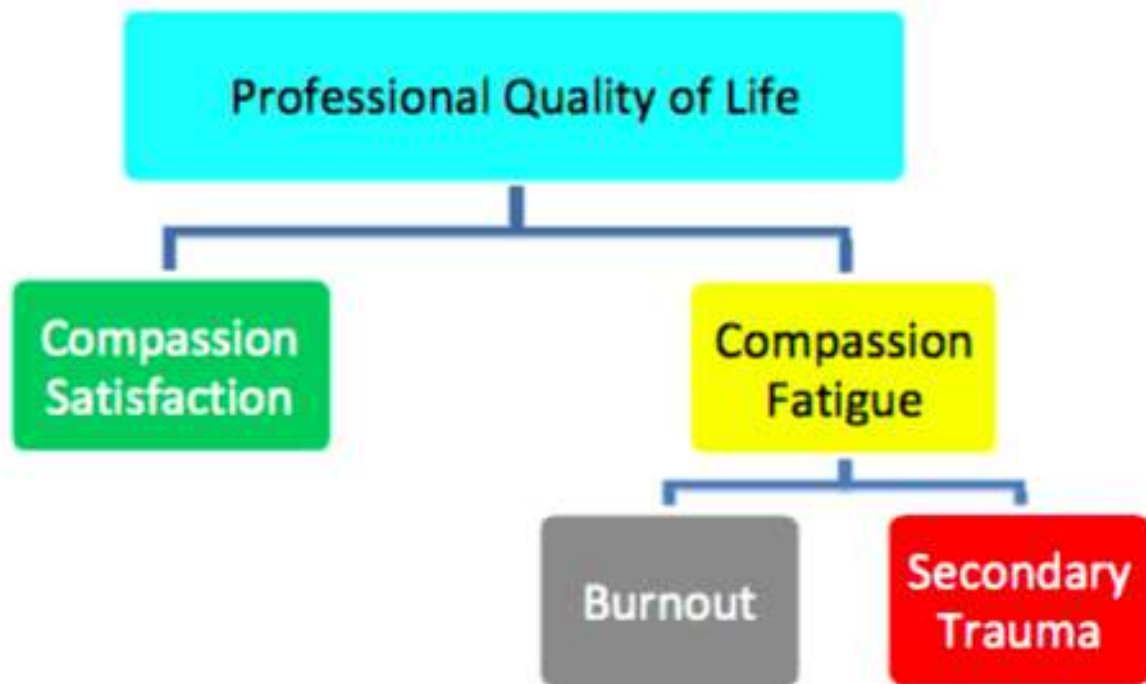
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*Figure 1.* Professional Quality of Life.

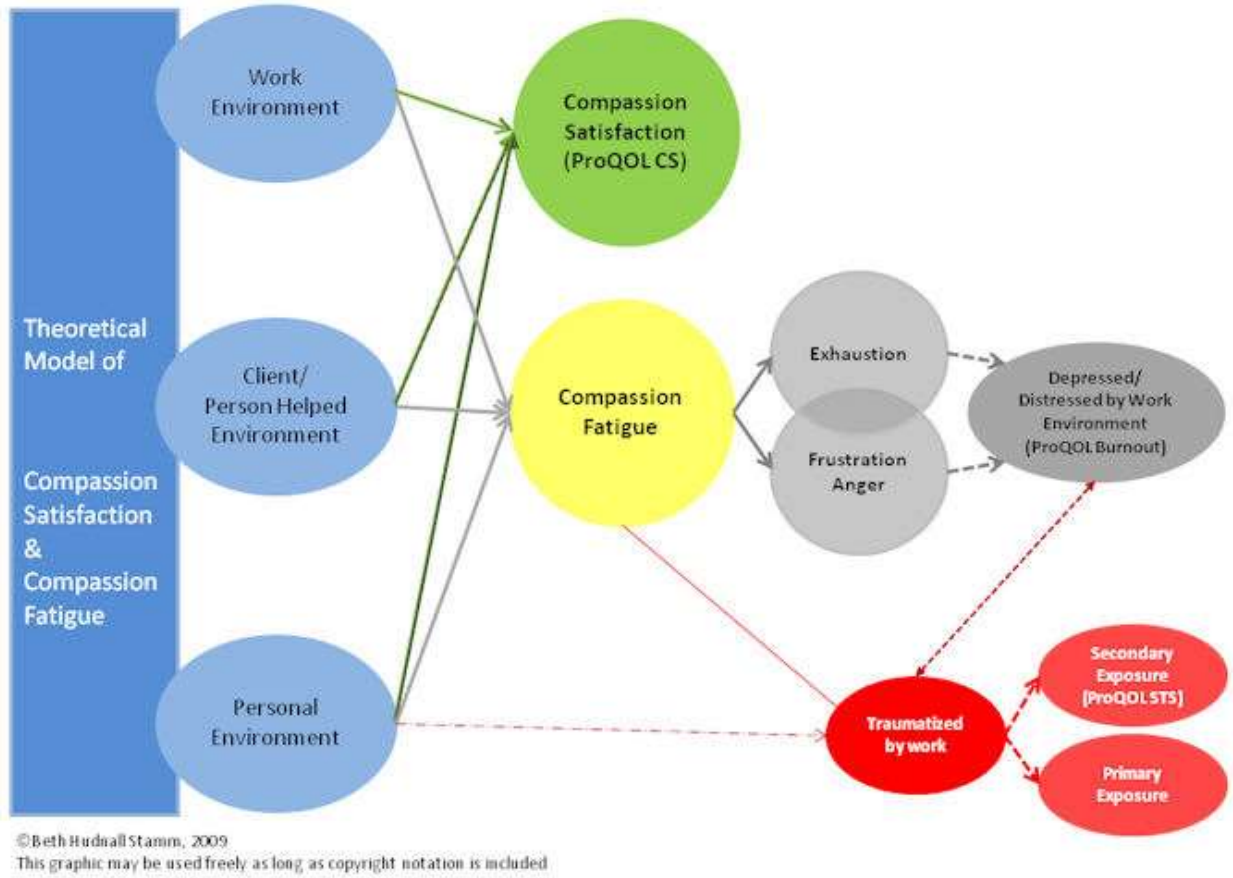
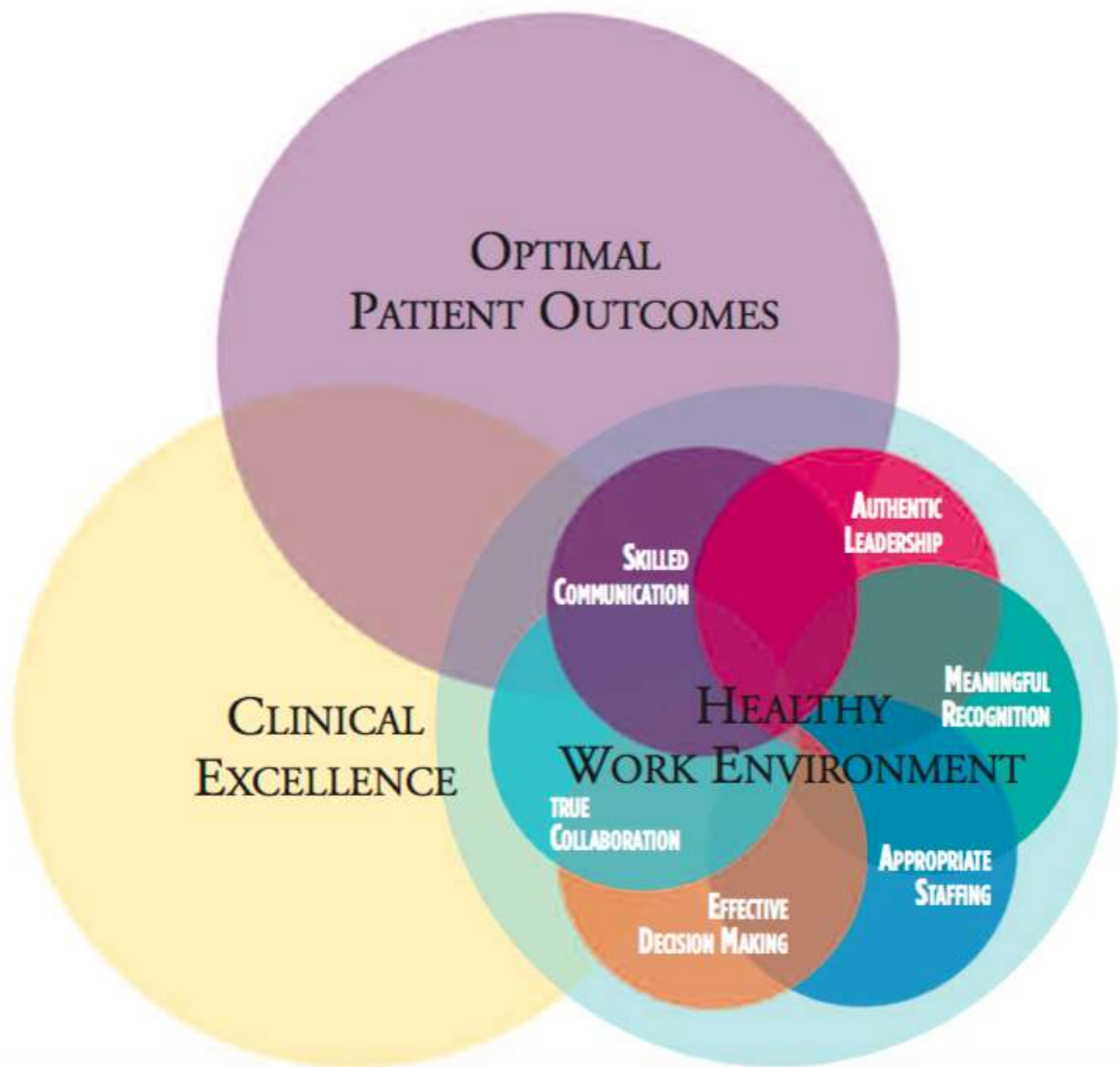


Figure 2. Theory of CS-CF Model.





*Figure 3.* Six characteristics of a healthy work environment.

<b>Variable</b>	<b>No. (%)</b>
<b>Gender</b>	
Female	71 (72.4)
Male	17 (17.3)
Missing	10 (10.2)
<b>Shift</b>	
Day	39 (39.8)
Night	47 (48)
Missing	12 (12.2)
<b>Education</b>	
Diploma	4 (4.1)
Associate	11 (11.2)
Bachelor	68 (69.4)
Master	4 (4.1)
Missing	11 (11.2)
<b>Manager Support</b>	
Yes	75 (76.5)
No	11 (11.2)
Missing	12 (12.2)
<b>Unit</b>	
CVICU	39 (39.8)
Registry	3 (3.1)
MCC	19 (19.4)
NCC	1 (1)
TSICU	25 (25.5)
Missing	11 (11.2)
<b>Unit Experience, y</b>	
<1	13 (13.2)
1-3	47 (48)
4-6	13 (13.2)
7-10	8 (8.1)
11-15	2 (2)
16-20	2 (2)
>20	2 (2)
Missing	11 (11.2)
<b>Nursing Experience, y</b>	
<1	8 (8.1)
1-3	31 (31.6)
4-6	19 (19.4)
7-10	8 (8.1)
11-15	6 (6.1)
16-20	2 (2)
>20	13 (13.1)
Missing	11 (11.2)
<b>Age, y</b>	
20-29	42 (42.8)

30-39	20 (20.3)
40-49	8 (8)
≥50	13 (13)
Missing	15 (15.3)

*Table 1.* Demographic characteristics of survey participants.

Variable	Compassion Satisfaction <i>B</i> (beta)*	Burnout <i>B</i> (beta)*	Secondary Traumatic Stress <i>B</i> (beta)*
Intercept	31.43	72.27	76
S1 Skilled Communication	-1.21 (-.19)	0.82 (.14)	-0.61 (-.10)
S2 True Collaboration	3.03** (.47)	-0.95 (-.15)	1.77 (.30)
S3 Effective Decision Making	-2.31** (-.30)	1.50 (.21)	0.30 (.04)
S4 Appropriate Staffing	0.28 (.03)	-1.69 (-.23)	-2.56** (-.36)
S5 Meaningful Recognition	0.19 (.03)	-0.44 (-.07)	2.19** (.37)
S6 Authentic Leadership	3.45** (.49)	-2.65** (-.41)	-3.30** (-.53)
Adjusted $R^2$	0.32	0.22	0.16
<i>F</i>	7.91	5.04	3.74

\* Standardized Coefficients Beta

\*\*  $p < 0.05$

*Table 2.* Linear regression between healthy work environment standards and ProQOL scores.

Pearson Correlation	CSt	1.00			S1	S2	S3	S4	S5	S6
	BOt		1.00							
	STSt			1.00						
	S1	.37	-.28	-.16	1.00	.77	.65	.42	.60	.72
	S2	.49	-.35	-.04	.77	1.00	.65	.50	.64	.67
	S3	.23	-.20	-.09	.65	.65	1.00	.43	.60	.63
	S4	.32	-.40	-.22	.42	.50	.43	1.00	.70	.48
	S5	.38	-.39	-.06	.60	.64	.60	.70	1.00	.64
	S6	.52	-.44	-.31	.72	.67	.63	.48	.64	1.00
	Sig. (1-tailed)	CSt	.			.000	.000	.016	.001	.000
BOt			.		.004	.000	.028	.000	.000	.000
STSt				.	.070	.331	.195	.017	.274	.002
S1		.000	.004	.070	.	.000	.000	.000	.000	.000
S2		.000	.000	.331	.000	.	.000	.000	.000	.000
S3		.016	.028	.195	.000	.000	.	.000	.000	.000
S4		.001	.000	.017	.000	.000	.000	.	.000	.000
S5		.000	.000	.274	.000	.000	.000	.000	.	
S6	.000	.000	.002	.000	.000	.000	.000	.000	.	
N	CSt	86			86	86	86	86	86	86
	BOt		86		86	86	86	86	86	86
	STSt			86	86	86	86	86	86	86
	S1	86	86	86	86	86	86	86	86	86
	S2	86	86	86	86	86	86	86	86	86
	S3	86	86	86	86	86	86	86	86	86
	S4	86	86	86	86	86	86	86	86	86
	S5	86	86	86	86	86	86	86	86	86
S6	86	86	86	86	86	86	86	86	86	

Table 3. Correlations between healthy work environment standards and ProQOL scores.