2018

The Relationship between Certified Registered Nurse Anesthetists' Emotional Intelligence and Burnout

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Walden University
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Abstract

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MSN, California State University, Fullerton, 2001

BSN, University of Phoenix, 1999

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Services – Leadership

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Abstract

Certified Registered Nurse Anesthetists (CRNAs) administer more than 43 million anesthetics within the United States and practice in every setting where there is anesthesia. Stress and burnout can be a common problem for CRNAs. The purpose of this correlation study was to examine the relationship between emotional intelligence (EI) and burnout syndrome among CRNAs. The research questions assessed CRNAs and the relationship between EI and burnout syndrome, the burnout score and the four dimensions of EI, and EI and the three dimensions of burnout. Certified and recertified CRNAs ($N = 506$) completed the Wong and Law Emotional Intelligence Scale, the Maslach Burnout Inventory, and a demographics survey. The results of a correlation analysis and linear regression indicate that there is a correlation between EI and burnout syndrome for CRNAs and when increasing the EI score by one unit, a 20% reduction in burnout occurs. A relationship also exists between the burnout score and the four dimensions of EI for CRNAs, with self-emotion appraisal and regulation of emotion statistically significant ($p < 0.05$). Each component of burnout syndrome correlated with a CRNA's EI score, with diminished personal accomplishment having the strongest correlation ($r = .451$; $p < 0.05$). EI is present for CRNAs, and there is an inverse relationship with burnout syndrome, which is a new contribution to the literature. Regarding positive social change, results may yield modifications in the education of Student Registered Nurse Anesthetist (SRNA) or opportunities for CRNAs to build additional EI skills. This study offers healthcare administrators insight that EI is a factor in reducing burnout and beneficial to increasing wellness of the healthcare staff.

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Dedication

I dedicate this dissertation to my family. First and foremost, Steve Heikkila, my husband, my friend, and my wingman in life. Steve, you are my staunchest supporter and also one of my most prominent critics. You want me to be the best that I can be, and I appreciate your love, honesty, and support. I believe I am a better wife, mother, and leader because of you.

Jacob, Samantha, and Nicholas, I am so proud to call myself your Mom. While I wear many hats in life, my favorite one is your mother. No matter how difficult things can get, remember never to give up. Keep on moving forward!

Acknowledgments

Thank you to my husband who has supported my wild ideas for the last 22+ years, especially the last six years during this dissertation journey. My accomplishments in life have only been possible with your love and support. Thank you to my parents John and Loretta Hetman for teaching me the value of hard work. I think back to that dinner conversation in the early 90s when you thought I was crazy for wanting to go to nursing school, especially when I had such a great job already. Despite your hesitation and concern, you continued to support me in my aspirations.

Thank you to my children Jacob, Samantha, and Nicholas for your patience. Not to mention those moments of quiet to let Mommy do her schoolwork. Thank you also to my friends and family members who have provided encouragement, love, and support. To my classmates in the dissertation cohort, thank you for your advice, inspiration, and support. A special thank you to Lisa Losito for your love and friendship.

An enormous shout out to my committee chair, Dr. Michael Furukawa, for your knowledge, guidance, advice, and support throughout this dissertation marathon. Also, thank you to Dr. Lawrence Fulton for being on my committee and all of your time and energy over the handful of courses we had together. I appreciated all of your wisdom along the way since the development of this dissertation topic five years ago in Research 8200. Thank you to Dr. Carmen McDonald, for stepping up as my new committee member right when I needed one. Some say it takes a village to raise a child, well I am here to tell, it took an entire community to get me to the finish line of this dissertation journey.

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Chapter 1: Introduction to the Study

Introduction

The field of anesthesia is a stressful specialty that may lead to burnout (Chipas & McKenna, 2011; Nyssen, Hansez, Baele, Lamy, & De Keyser, 2003; Zanaty et al., 2017). All anesthesia providers, including Certified Registered Nurse Anesthetists (CRNAs) are expected to manage critical events and effectively respond to the anesthetic needs of patients whether independently or in collaboration with other members of the anesthesia care team (Gaba, Fish, & Howard, 1994). In addition, the CRNAs should maintain the following professional attributes: collaboration with other patient team members, situational awareness, professional engagement, cultural competence, use of evidence-based practice, and the ability to foster a teaching environment and act as a leader who can articulate direction (American Association of Nurse Anesthetists [AANA], 2016b). These professional attributes along with formal nurse anesthesia education and clinical experience exemplify the foundation for a CRNA's professional growth, career engagement, and personal satisfaction (AANA, 2016b). Emotional intelligence (EI) encompasses many of these professional attributes of the CRNA.

EI is the ability to recognize one's emotions and feelings as well as the emotions of others (Salovey and Mayer, 1990). Goleman (1998) popularized the concept of EI and suggested that top performers are individuals who have EI. EI is an essential characteristic for leaders within the business workplace but is an emerging topic within the healthcare literature (Delmatoff & Lazarus, 2014; Goleman, 1998; Kivland, 2014). Nursing leaders with a high EI are essential to healthcare organizations and an asset to

healthcare (Vitello-Cicciu, 2002). EI has also been noted to be a useful leadership quality to possess in the operating room (OR) and is essential to ensuring team collaboration and productivity (Donnelly, 2017).

CRNAs are highly educated professionals who administer more than 43 million anesthetics within the United States and have delivered anesthesia for over 150 years (AANA, 2016a). CRNAs practice in every setting where anesthesia occurs and, in some states, are the sole providers of anesthesia for rural hospitals (AANA, 2016a). The AANA (2016a) mentioned that CRNAs have an exceptional safety record and are considered the most cost-effective anesthesia providers. Chipas and McKenna (2011) postulated that CRNAs work and live in a stressful environment. Additionally, Wright et al. (2012) said that stress is a crucial factor and anesthesia providers sometimes cope with their stress ineffectively. Stress and burnout are common problems, which are well documented among many healthcare specialists, including physicians and nurses (Hyman et al., 2011). Görgens-Ekermans and Brand (2012) found an inverse relationship between high EI and a low level of stress and burnout in a sample of South African nurses. Less burnout was noted among physicians with a high EI score (Weng et al., 2011). The empirical research was conducted in this quantitative study to determine the relationship between the level of EI and burnout syndrome for CRNAs.

CRNAs work in a stressful environment and suffer from stress and burnout; however, CRNAs with high levels of EI have less stress and burnout. An inverse relationship between EI and burnout syndrome suggests the need for EI to be part of the nurse anesthesia curricula. Exhibiting greater leadership qualities such as EI while

experiencing less stress and burnout could increase job satisfaction, patient satisfaction, and interpersonal relationships with other healthcare providers. This study would be of importance to the AANA with implications of change for both current and future CRNAs.

Chapter 1 reviews the background of the study with a brief summary of the literature and describes the gap in knowledge. The problem statement and gap in the current research literature are discussed, which is followed by the purpose of this quantitative study. The research questions are presented along with the corresponding null and alternative hypotheses. The theoretical foundation is briefly discussed and how it relates to the identified research questions. A rationale for the nature of study with a summary of the methodology is provided. Key definitions essential to the study are identified and defined. The assumptions of this study are presented, followed by a discussion on the scope and delimitations. The limitations of the study will also be discussed. Finally, the importance of conducting this original research was reviewed along with the potential impact on the nurse anesthesia profession.

Background of the Study

CRNAs administer more than 43 million anesthetics a year and practice in every setting where anesthesia occurs (AANA, 2016a). Also, CRNAs are the sole providers of anesthesia in many rural states (AANA, 2016a). While CRNAs work in collaboration with surgeons, anesthesiologists, dentists, podiatrists, and other healthcare professionals, CRNAs are accountable for the quality of anesthesia administered (AANA, 2016a). CRNAs work and live in a stressful environment and have been included among

perioperative members where burnout is prevalent (Chipas & McKenna, 2011; Hyman et al., 2011). An inverse relationship exists between stress and EI as well as burnout and EI (Birks, McKendree, & Watt, 2009; Görgens-Ekermans & Brand, 2012; Noh, Park, & Im, 2016: Vlachou et al., 2016). Weng et al. (2011) discovered that physicians with a high EI had less burnout and higher job satisfaction. Less burnout was associated with higher job satisfaction (Weng et al., 2011).

There have been several studies supporting the correlation between high EI and lower burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin, Liebert, Tran, Lau, & Salles, 2016; Noh et al., 2016; Vlachou et al., 2016; Weng et al., 2011). Among a group of South African nurses, nurses with higher EI had lower stress and reduced incidence of burnout (Görgens-Ekermans & Brand, 2012). A correlation was noted between high EI and less burnout in a study of Greek healthcare professionals working in the rehabilitation field (Vlachou et al., 2016). A strong inverse correlation between EI and two of the burnout dimensions, emotional exhaustion and depersonalization, was noted for resident physicians (Lin et al., 2016). Weng et al. (2011) found that higher EI of doctors correlated with less burnout as well as higher job satisfaction.

Effective leaders are individuals who have EI, which consists of a combination of five attributes. These attributes are: self-awareness with the ability to understand self and others, skill to control their moods and are considered self-regulating, displaying a high level of motivation that is exhibited by their desire to achieve their goals, capacity to show empathy and understand others, and proficiency in social skills (Goleman, 2004). Successful leadership and personal excellence are related to EI. In addition, EI is related

to wellness, job satisfaction, patient satisfaction, personality traits, stress, and burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Kim & Lee, 2016; Nel, Jonker, & Rabie, 2013; Noh et al., 2016; Por, Barriball, Fitzpatrick, & Roberts, 2011; Weng et al., 2011). EI has been determined to be a beneficial quality for many healthcare professionals; however, the level of EI for CRNAs or the relationship between EI and burnout for CRNAs is unknown.

Statement of the Problem

CRNAs are autonomous anesthesia providers who endure a heavy load of responsibility when administering anesthesia and work in a stressful environment, which could lead to burnout (AANA, 2016a; Chipas & McKenna, 2011). Burnout syndrome, a common problem, was well documented for healthcare professionals including nurses and physicians (Hyman et al., 2011; Lin et al., 2016; Salyers et al., 2017; Studer, 2015). Burnout syndrome could be a potential threat to patient safety and quality.

EI has been identified to be inversely related to burnout syndrome among healthcare professionals (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Noh et al., 2016; Vlachou et al., 2016; Weng et al., 2011). Burnout is a phenomenon that is experienced by CRNAs and anesthesiologists (Chipas & McKenna, 2011; Hyman et al., 2011; Meeusen, Van Dam, Brown-Mahoney, Van Zundert, & Knape, 2011). An inverse relationship between EI and burnout indicated that EI would be a desirable trait for CRNAs to possess. EI could be a useful component that should be included in the curriculum for healthcare providers (Collins, 2013; Stoller, Taylor, &

Farver, 2013). There was a gap in the literature regarding the relationship between EI and burnout among CRNAs.

Purpose of the Study

The purpose of this quantitative study was to survey a sample of the CRNA population to determine the relationship between the level of EI and burnout syndrome. Also, this study examined the correlation between the four EI dimensions (self-emotion appraisal, others' emotion appraisal, use of emotions, and regulation of emotion) and overall burnout among CRNAs. Finally, the relationship between total EI and the three burnout domains (emotional exhaustion, depersonalization, and personal accomplishment) was studied. The intent was to investigate the relationship that may exist between EI and burnout syndrome to promote social change for CRNAs.

Goleman (1998) proposed that an individual with EI could enhance their abilities to deal with conflict. As healthcare is rapidly evolving, it is speculated that CRNAs continue to be used because they are more cost-effective than their physician counterparts (Hogan, Seifert, Moore, & Simonson, 2010). Exhibiting more leadership qualities such as EI, while experiencing less burnout, could increase job and patient satisfaction as well as interpersonal relationships with other healthcare providers. The primary drivers are safe, high-quality, and cost-effective patient care.

Research Questions and Hypotheses

The hypothesis for this current study is that CRNAs with an increased level of EI are more likely to exhibit lower levels of burnout syndrome. The research questions for this study are as follows:

RQ1: What is the relationship between the level of EI and burnout syndrome for CRNAs?

H_o1*:* No relationship exists between the level of EI and burnout syndrome for CRNAs.

H_a1: A relationship exists between the level of EI and burnout syndrome for CRNAs.

RQ2: What is the relationship between the overall burnout score and the four dimensions of EI (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) for CRNAs?

H_o2*:* No relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

H_a2*:* A relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

RQ3: What is the relationship between the overall level of EI and the three dimensions of burnout syndrome (emotional exhaustion, depersonalization, and diminished personal accomplishment) for CRNAs?

H_o3*:* No relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

H_a3: A relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

Theoretical Framework

The theoretical framework to address the research questions for this quantitative research includes an amalgam of EI theories. The construct of EI was initially discussed by Mayer, Caruso, and Salovey (1999) with the Four-Branch Model of EI. Davies, Stankov, & Roberts (1998) elaborated on the Four-Branch Model to create the four-dimensional definition of EI. The components of the four-dimensional definition of EI includes "appraisal and expression of emotion in oneself, appraisal and recognition of emotion in others, regulation of emotion in oneself, and use of emotion to facilitate performance" (Law, Wong, & Song, 2004, p. 484). The definitions between Mayer et al. (1999) and Davies et al. (1998) are different; however, they are quite complementary of each other (Ciarrochi, Chan, & Caputi, 2000). The Wong and Law Emotional Intelligence Scale (WLEIS) was developed by Wong and Law and was more representative of the EI literature (Law et al., 2004).

Appraisal and expression of emotion in self, referred to as self-awareness, is the foundation of EI (Bradberry & Greaves, 2009; Goleman, 1995). The ability to perceive one's own emotions allows one to genuinely understand reactions to events, people, and challenges (Bradberry & Greaves, 2009). Regulation of emotion in self is the ability to know what to do with the knowledge from the emotional appraisal, primarily the action or lack of actions (Bradberry & Greaves, 2009; Goleman, 1995; Wong & Law, 2002). Appraisal and recognition of emotion in others is the capability to be empathetic and

understand the emotions felt by those around them (Bradberry & Greaves; Goleman, 1995; Wong & Law, 2002). Finally, using emotion to facilitate performance is the skill to build relationships and communicate effectively (Wong & Law, 2002). Use of emotion or managing relationships effectively is the culmination of the other three EI skills: self-emotion appraisal, regulation of emotion in self, and appraisal and recognition of emotion in others (Bradberry & Greaves, 2009; Goleman, 1995; Wong & Law, 2002). Figure 1 is a visual representation of the four dimensions of EI, with appraisal and expression of emotion in the self as the foundation and use of emotion to facilitate performances as the peak of EI. Law et al. (2004) postulated that an individual who has higher EI should be happier in life and is less affected by his or her emotions.

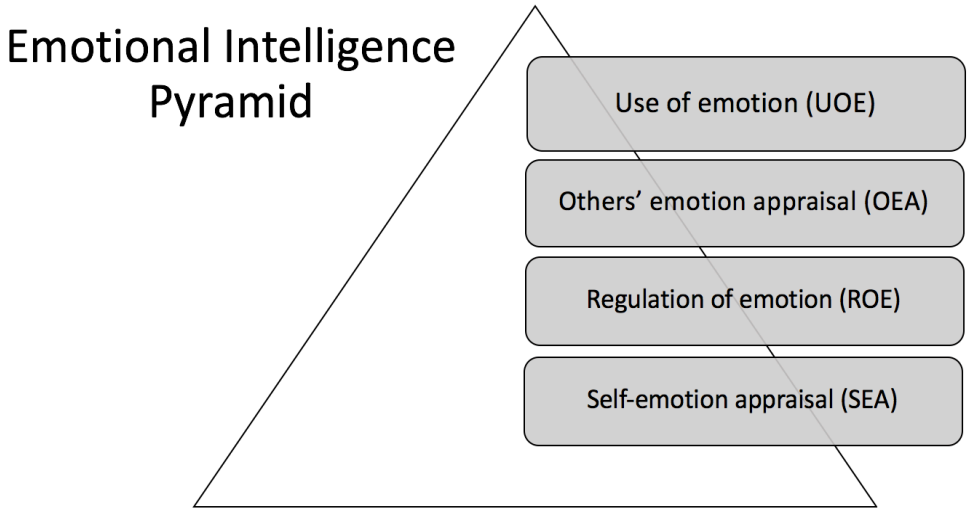

Figure 1. Emotional intelligence pyramid.

Furthermore, having the skill to recognize not only their own emotions but also the ability to direct emotions towards a positive path would lead to higher life satisfaction (Law et al., 2004). An individual who could harness their emotions is more likely to be

better at stress management and have less burnout (Weng et al., 2011). Goleman (1995) said that individuals who are in flow with their emotions and reactions to emotions are less likely to suffer from emotional exhaustion, a key component in burnout syndrome.

Effective leaders are individuals who have EI (Goleman, 2004). EI has been endorsed as a good predictor of job performance and an essential criterion for maintaining psychological well-being and reducing occupational stress (Law et al., 2004). One's EI increases with age and EI can be learned (Goleman, 2004). The four-dimensional definition is the foundational underpinning for the current research regarding the critical aspects of EI, which are compared to burnout.

Nature of the Study

A correlational quantitative research design was appropriate to examine the relationship between EI (independent variable) and burnout syndrome (dependent variable) for CRNAs. The study design was a national survey which was nonexperimental and took place in a natural environment without any influence from the researcher. The goal was to examine the relationship between EI and burnout syndrome based on the answers from the survey; therefore, a correlational design was chosen. The study population was a sample of certified and recertified CRNAs within the United States. Correlational studies are the best way to determine the relationship between variables and are quick and inexpensive (Frankfort-Nachmias, Nachmias, & DeWaard, 2015). An online survey via SurveyMonkey was used for data collection. The survey included responses from a self-reporting Internet survey to analyze the relationship between a CRNA's EI and burnout syndrome. A link to the survey was distributed via

email by the AANA to both certified and recertified CRNAs throughout the United States. In addition to the email blast from the AANA, a link to the survey was made available to a Facebook group of CRNAs/SRNAs.

Data was collected through an online survey using SurveyMonkey and the instruments for the data collection included the WLEIS and the Maslach Burnout Inventory for Human Services Survey (MBI-HSS). Demographic questions regarding age, gender, ethnicity, family status, educational level, and years of CRNA experience were included in the survey. Data were analyzed using SPSS version 24, which was cleaned and screened. Descriptive analysis and inferential statistics were conducted. Frequencies and percentages were reported for participant demographics and presented in a summary and graphic analysis. The mean, standard deviations, and minimum and maximum are reported for levels of EI and the four domains of EI, as well as burnout syndrome and the three areas of burnout.

The purpose of correlational statistics is to examine if there is a relationship between the variables. A Pearson's correlation coefficient was employed to determine the strength of the linear relationship between the two variables, and regression analysis was used to assess the predictability of the relationship. For the statistical tests, the statistical significance was determined at a $p > 0.05$.

Operational Definitions

The following terms are essential to this study:

Certified Registered Nurse Anesthetist (CRNA): A CRNA is an advanced practice registered nurse who is highly educated and trained in the discipline of nurse anesthesia to provide a full range of anesthesia and pain management services (AANA, 2016a).

Emotional Intelligence (EI): EI is the ability of individuals to assess and express emotion in themselves, evaluate and recognize emotion in others, self-regulate their feelings, and use their emotions to facilitate performance (Davies et al., 1998; Law et al., 2004; Wong & Law, 2002). The WLEIS is the survey used in this study to measure EI and is based on the four-dimensional definition of EI: self-emotion appraisal, others' emotion appraisal, regulation of emotion, and use of emotion.

Self-emotion appraisal: This is an individual's ability to understand their moods and naturally express their emotions (Davies et al., 1998; Law et al., 2004; Wong & Law, 2002).

Others' emotion appraisal: This is an individual's ability not only to perceive but also to understand the emotions of people around them (Davies et al., 1998; Law et al., 2004; Wong & Law, 2002).

Regulation of emotion: This is the individual's ability to control their own emotions and not lose their temper (Davies et al., 1998; Law et al., 2004; Wong & Law, 2002).

Use of emotion: Ability of an individual to use their emotions in positive ways and often be more productive (Davies et al., 1998; Law et al., 2004; Wong & Law, 2002).

Burnout Syndrome: Burnout syndrome is an extended response to stress within the workplace where there is some disconnect between the worker and the job and is

defined by three dimensions: emotional exhaustion, depersonalization, and personal achievement (Maslach, 2003; Maslach, Jackson, & Leiter, 2016). Burnout was measured in this survey by the MBI-HSS.

Emotional exhaustion: Emotional exhaustion is the reduction of the worker's positive emotions and a gradual reduction of energy. Exhaustion represents the primary response which often correlates with increased workload demands and physical and mental fatigue (Nastasa & Farcas, 2015; Maslach, 2003; Maslach et al., 2016; Vlachou et al., 2016).

Depersonalization: Depersonalization is the negative and cynical attitude that may occur with an individual who has been exhausted and is attempting to distance themselves from engaging from others (Maslach, 2003; Maslach et al., 2016; Nastasa & Farcas, 2015; Vlachou et al., 2016).

Diminished personal achievement: Diminished personal achievement manifests as a negative self-assessment of capabilities, services, and accomplishments. A reduction in personal achievement can be a consequence of either exhaustion and depersonalization, or a combination of the two (Maslach, 2003; Maslach et al., 2016; Nastasa & Farcas, 2015; Vlachou et al., 2016).

Assumptions

Several assumptions affected this study. One assumption was that participants were honest and had integrity while using the self-report online survey and they would be free from bias. Also, there was an assumption that CRNA participants have some basic computer literacy skills and the survey tool is valid.

The topic of this study was the relationship between EI and burnout syndrome among CRNAs. An assumption was that EI is on the positive pole of employee wellbeing and the burnout syndrome on the negative pole of wellbeing. There have been several studies supporting an inverse relationship between EI and burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Noh et al., 2016; Weng et al., 2011). Additionally, I assumed from both experience and the literature that CRNAs experience significant stress while managing a variety of crises that occur in practice. Another assumption was that the CRNAs would accept and participate in the survey. Finally, this study assumed that the results of this study could be used to improve EI training for CRNAs and reduce the amount of burnout, which could lead to safer patient care.

Scope and Delimitations

The study sample is limited to CRNAs who had an active email address on file with the AANA. Boundaries of this current study included the availability of the CRNA populations emails. The AANA has a policy regarding email solicitation for research participants with a limit of 3,000 emails. Not all members have email addresses that are accessible to the AANA, which was an additional boundary. Other delimitations are that some members have opted out of receiving promotional emails or emails requesting participation in surveys. The survey's questions specifically focused on EI, burnout syndrome, and demographics of certified and recertified CRNAs. The study sample included CRNAs who had accessibility to Facebook and belonged to the actual CRNA/SRNA Facebook page. The second sampling was done to capture CRNAs who do not belong to the AANA. Limiting the sample to 3,000 random CRNAs to receive an

email blast from the AANA and the CRNA/SRNA Facebook page was a delimitation for this study.

The four-dimensional definition of EI was chosen as the theoretical foundation for this study because it aligns well with the WLEIS; however, there were other theories and measurement tools that could have been used for this study. To operationalize EI, the WLEIS was used to analyze the four dimensions of EI: self-emotion appraisal, regulation of emotion, others' emotion appraisal, and use of emotion. The WLEIS, a self-report tool, was chosen because of the alignment with trait EI, decreased complexity for the participants, and no cost for use.

Limitations

Survey research is an important means of data collection in the social sciences. Distinct advantages of survey research include: low cost, maintenance of participant anonymity, and potential populations from a wide geographical area (Fowler, 2014: Frankfort-Nachmias et al., 2015). Furthermore, the online survey can be taken at any time and location, which allows participants the ability to complete the survey in their free time where they are most comfortable.

This study was subject to many limitations. One limitation of this study is that participation is voluntary, and the results could be biased because of self-selection. Also, because this was an online survey, I was not immediately available to answer questions from the participants, which could lead to an incomplete survey. Researcher bias could be reduced because of the online survey. There is potential for bias in this study because I

am a CRNA; however, personal preferences and values of the researcher are not as critical to a quantitative study (Creswell, 2013).

Another limitation of this study was that only certain CRNAs would agree to participate and the study sample may not be representative of the CRNA population; therefore, the generalizability of this study was limited. This study was original research and intended as a starting point for future research regarding CRNAs' EI and burnout.

Significance of the Study

Examining the relationship that exists between a CRNA's level of EI and burnout syndrome has the potential to promote change in the field of Nurse Anesthesia. Stress and burnout occur every day for healthcare professionals, especially CRNAs (Chipas & McKenna, 2011; Hyman et al., 2011; Studer, 2015). Healthcare providers with higher levels of EI have less burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Noh et al., 2016; Vlachou et al., 2016; Weng et al., 2011). Incorporating EI into the current SRNA curriculum would be recommended (Collins, 2013; Lin et al., 2016). Exhibiting greater leadership qualities such as EI while experiencing less burnout could increase job and patient satisfaction and improve interpersonal relationships with other healthcare providers (Studer, 2015). This study would be of importance to the AANA with an implication of change for both current and future CRNAs. Evaluating if a CRNA's EI does relate to burnout syndrome could be a significant driver towards safe, high-quality, and cost-effective patient care. This study could have implications for healthcare administrators. Incorporating EI into a hospital training program could

increase the wellness of the entire healthcare staff and potentially enhance patient satisfaction.

Summary

CRNAs are highly educated professionals who work in stressful environments and can suffer from stress and burnout. Some of the CRNAs responsibilities are to manage critical events and effectively respond to the anesthetic needs of the patients while collaborating with other patient team members, maintaining situational awareness, and acting as leaders who articulate direction. EI is a developing topic within the healthcare literature, and further research allows for a better understanding of EI for CRNAs and how EI relates to burnout. There have been several studies supporting the correlation between high EI and lower burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Noh et al., 2016; Vlachou et al., 2016; Weng et al., 2011); however, the relationship between EI and burnout syndrome for CRNAs was unknown. The purpose of this quantitative study was to survey a sample of the CRNA population to determine the relationship between the level of EI and burnout syndrome.

This study was a correlational quantitative research design to determine the relationship between EI (independent variable) and burnout syndrome (dependent variable) for CRNAs. The research questions for this study are as follows:

RQ1: What is the relationship between the level of EI and burnout syndrome for CRNAs?

RQ2: What is the relationship between the overall burnout score and the four dimensions of EI for CRNAs?

RQ3: What is the relationship between the overall level of EI and the three dimensions of burnout for CRNAs?

The four-dimensional definition of EI was used as the theoretical framework for this study. Data was collected through an online survey using SurveyMonkey and the instruments for the data collection were the WLEIS and the MBI-HSS.

The purpose of this research was to determine if there was a relationship between the variables; therefore, a Pearson's correlation coefficient was evaluated as well as regression analysis to determine the strength and the predictability of the relationship. Examining the relationship that exists between a CRNA's level of EI and burnout syndrome has the potential to promote change in the field of nurse anesthesia. Chapter 2 includes the relevant literature in this study and discusses the gap in literature.

Chapter 2: Literature Review

Introduction

CRNAs are advanced practice registered nurses who administer more than 43 million anesthetics within the United States (AANA, 2016a). CRNAs have been providing anesthesia for over 150 years and practice in every setting where anesthesia is delivered and administer all types of anesthetics, including general anesthesia, regional anesthesia, sedation, and pain management (AANA, 2016a). The AANA (2016a; 2018), represents over 50,000 CRNAs, reported that CRNAs have an exceptional safety record, and are considered the most cost-effective anesthesia providers. CRNAs often work autonomously as sole providers, especially in rural America; however, they collaborate care with many members of the healthcare team (AANA, 2016a).

CRNAs have been included among perioperative team members who have increased stress and are subject to burnout (Chipas & McKenna, 2011; Hyman et al., 2011). Chipas and McKenna (2011) said that CRNAs work and live in a stressful environment which could subject them to burnout. Stress and burnout are common problems which are well documented for many healthcare specialists, including physicians and nurses (Hyman, et al., 2011; Studer, 2015). EI could be a factor in predicting the level of wellness, stress, and burnout (Lin et al., 2016). Physicians with a high EI were noted to have less burnout (Weng et al., 2011). Görgens-Ekermans and Brand (2012) discovered an inverse relationship between South African nurses' high EI and level of stress and burnout. The relationship between EI and burnout for various healthcare providers can be found in the literature; however, the gap was that the

relationship between the level of EI and burnout syndrome among CRNAs was unknown. The purpose of this quantitative study was to survey a sample of the CRNA population to determine if there was a relationship between the level of EI and burnout syndrome among CRNAs. In addition, the purpose of this study was to examine if there was a relationship between the four EI dimensions and the overall level of burnout among CRNAs. Finally, this study was designed to investigate if there was a relationship between the overall level of EI and the three burnout domains.

Chapter 2 includes an analysis of the empirical research regarding EI and burnout that contributes to an understanding of the relationship between EI and burnout among CRNAs. The theoretical development and model of EI were discussed with the identification of the four-dimensional definition of EI used for this study. EI specifically in healthcare was the focus of the next section. Articles that concern EI, CRNAs, and SRNAs are discussed. The dependent variable of burnout as it is related to healthcare was evaluated followed by an examination of the empirical research available regarding the relationship between EI and burnout in other professional fields.

Literature Search Strategy

Literature review resources consisted of scholarly articles, professional websites, books, and peer-reviewed articles. Research databases used for this study included health sciences, nursing, business and management, and psychology found within the Walden University Online Library. Google Scholar was also used to identify credible articles that reviewed the link between the variables of EI and burnout. Search terms included *emotional intelligence*, *burnout*, *burnout syndrome*, *empathy*, *CRNAs*, and *SRNAs*. The

literature review included original articles conducted in the 1980s; however, the bulk of the literature was published in the last 10 years. The research was collected, analyzed, and categorized for inclusion.

CRNAs

History

CRNAs have been providing anesthesia care for 150 years and the delivery of anesthesia by a nurse, Catherine S. Lawrence, can be traced back to the Civil War. Sister Mary Bernard was the first nurse to specialize in anesthesia in 1877, and through her, other nuns who were nurses were trained to administer anesthesia (Matsusaki & Sakai, 2011; Ray & Desai, 2016). According to 2017 data, there are over 52,000 CRNAs and SRNAs nationwide who administer approximately 43 million anesthetics (AANA, 2018).

The AANA (2016a) is the national association which represents 90% of the CRNA population, men represent more than 40% of that population, which is significant compared to only 10% men in the entire field of nursing. The AANA, formerly named the National Association of Nurse Anesthetists (NANA), was established in 1932 by Agatha Hodgins (Matsusaki & Sakai, 2011; Ray & Desai, 2016). In 1957, the certification for nurse anesthetists was established and the adoption of the term CRNA commenced (Matsusaki & Sakai, 2011; Ray & Desai, 2016).

Education and Training

To be considered a candidate for admission into a CRNA program, there are various requirements that include a baccalaureate or other graduate degree in nursing, possession of a license to practice as a registered nurse, and a minimum of one year of

training in a critical care environment (AANA, 2016a). To become a CRNA, a nurse must attend an accredited nurse anesthesia educational program that ranges from 24 to 42 months and includes a rigorous didactic component as well as an extensive clinical component (AANA, 2016a; Matsusaki & Sakai, 2011; Ray & Desai, 2016). Upon completion of the educational and clinical requirements, a graduate must successfully pass the National Certification Examination (NCE) before being credentialed as a CRNA (AANA, 2016a). The National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA, 2017a), a not-for-profit corporation, works closely with the AANA yet remains an autonomous organization that oversees the certification and recertification for CRNAs. The recertification of CRNAs has gradually evolved into a program which requires the CRNA to complete a minimum of 100 continuing education credits, complete modules in four different anesthesia focused areas, and pass a comprehensive recertification exam every 8 years (AANA, 2016a; NBCRNA, 2017b).

Nature of Work

CRNAs administer general, regional, and local anesthesia and provide pain management services in a variety of settings including traditional hospitals, critical access hospitals, ambulatory surgical centers, U.S. military facilities, Department of Veterans Affairs healthcare facilities, and offices of dentists, podiatrists, and plastic surgeons (AANA, 2016a). CRNAs collaborate with surgeons, obstetricians, anesthesiologists, dentists, and other healthcare professionals yet practice with a significant amount of autonomy (AANA, 2016a). Millions of Americans rely on CRNAs for their anesthesia care, and in rural America, the CRNA may be the only anesthesia provider (AANA,

2016a). CRNAs provide more anesthetics than anesthesiologists to vulnerable populations across the United States (Liao, Quraishi, & Jordan, 2015). Providing safe anesthesia care can be stressful and requires preparation to manage the various crises that can occur in practice (Chipas & McKenna, 2011; Collins, 2013; Gaba et al., 1994).

Theoretical Development for EI

EI has advanced over the last 25 years with several theories, models, and measurements (Barchard, Brackett, & Mestre, 2016). Salovey and Mayer (1990) were the earliest to use the term EI as an ability for one to manage their emotions. EI is a concept that was popularized by Goleman (1995); however, there has been debate over the scientific reliability of the terminology used as well as extraordinary claims made by Goleman (Mayer et al., 2008; Petrides, 2010). EI is a combination of identifying, understanding, and managing emotions.

The construct of EI has been a debated topic with various definitions, theories, models, and measurement tools. The theoretical framework to address the research questions for this quantitative research is based on the four-dimensional definition as discussed by Davies et al. (1998), which is an amalgam of EI theories. The four EI dimensions shown in Figure 2 are, "(a) appraisal and expression of emotion in the self, (b) appraisal and recognition of emotion in others (c) regulation of emotion in the self and others, and (d) use of emotion to facilitate performance" (Davies et al., 1998, p. 990-991). The four-dimensional framework has been developed to represent the multidimensional construct of EI and aligns with the WLEIS. While the different concepts of EI tend to be complementary of each other, many researchers continue to

group EI theories and measurement tools into the following classifications: ability based, trait-based, or a mixed trait ability.

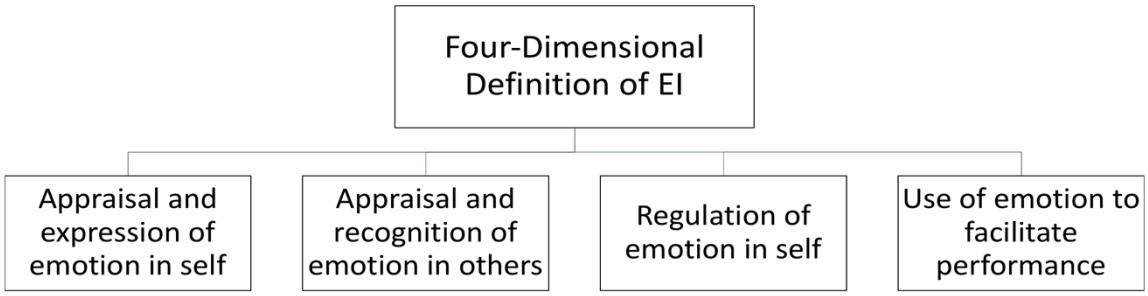

Figure 2. Four-dimensional definition of EI.

Ability Based EI

EI, the ability to link emotion and intelligence that overlaps cognitive ability, was proposed initially by Salovey and Mayer (1990) as a subset of social intelligence with the conceptualization of EI as three components. Later, the three elements became four branches of problem-solving abilities related to emotion (Mayer & Salovey, 1997). The branches divide abilities and skills into four areas: identifying emotions, using emotions to assist thinking, analyzing emotions, and managing emotions (Mayer, Salovey, & Caruso, 2004, 2008). EI has recently been discussed as a 'hot intelligence' and defined as "the ability to reason validly with emotions and with emotion-related information, and to use emotions to enhance thought" (Mayer, Caruso, & Salovey, 2016, p.295).

Trait-based EI

Trait-based EI has been discussed as one of the primary research streams of EI (Barchard et al., 2016). While ability EI is rooted as a cognitive ability, trait EI was

developed to represent a person's perceptions of the emotional world (Petrides & Furnham, 2000; Petrides et al., 2016). The global traits of EI are divided into 15 subscales of personality domain which were then grouped into four subscales to include: well-being, self-control, emotionality, and sociability (Petrides, 2010; Petrides et al., 2016). Trait EI facets are personality traits, compared to competencies or abilities (Petrides, 2010). Some argue that trait EI place too much focus on the personality traits and that trait EI was only a component of a much broader definition of EI (Cherniss, 2010; Mayer, Salovey, & Caruso, 2008).

Mixed-Trait Ability EI

Goleman (1995) proposed a mixed model, which included both the abilities and traits of EI. The approach by Goleman is a combination of four competencies: self-awareness, self-management, social awareness, and relationship management (Goleman, 1995; Cherniss, 2010). Goleman's approach along with Bar-On (2010) are labeled as mixed because of the unrelated attributes and the belief that there is a lack of primary focus regarding EI (Mayer, Roberts, & Barsade, 2008). The criticism comes from the authors of the ability model; however, Codier, Muneno, Franey, and Matsuura (2010) discussed that a limitation of the mixed model approach was the overlapping with personality tests. Cherniss (2010) mentioned that the methods of Bar-On and Goleman are not considered models of EI but consist primarily of social and emotional competencies.

EI in Healthcare

The high EI individual has been noted to be involved in professions involving social interactions, requiring direct contact, and interfacing with customers (Mayer, Salovey, & Caruso, 2008; Wong & Law, 2002). EI is an important characteristic for successful leaders, yet EI is an emerging topic in the healthcare literature. Emotionally intelligent nursing leaders are an asset to healthcare organizations, and nursing leaders with a high EI are essential in the changing landscape of healthcare (Vitello-Cicciu, 2002). Individuals with higher EI have benefits not only for the healthcare professionals but also for the patients they care for (Faguy, 2012). Decety and Fotopoulou (2015) concluded that when a healthcare practitioner takes time to bond with patients, that bond can be beneficial in the healing process. Furthermore, nurses who work in an emotional environment daily are more satisfied and successful, not only if they possess the ability to perceive emotions of self and others, but also effectively manage those emotions (Vandewaa, Turnipseed, & Cain, 2016).

EI, CRNAs, and SRNAs

EI research has involved various healthcare providers; however, research concerning CRNAs is limited. King (2016) conducted a dissertation regarding the development of EI training for CRNAs and discussed that improved EI could benefit a CRNA in the operating room and could improve patient outcomes as well as staff satisfaction.

A cross-sectional correlation study was conducted by Collins (2013) to measure EI among SRNAs and the relationship of EI to academic factors. The Mayer-Salovey-

Caruso Emotional Intelligence Test (MSCEIT) was taken online by 216 students from four nurse anesthesia programs (Collins, 2013). Several of the EI variables were found to be predictive of success on the national certification exam; however, the EI variables were not predictive of the GPA in nurse anesthesia school (Collins, 2013). The recommendation is for further longitudinal studies to be conducted and that EI training is incorporated into the nurse anesthesia curriculum (Collins, 2013; Collins, Covrig, & Newman, 2014).

Theoretical Development for Burnout

Burnout is a well-established concept that has been around since the mid-1970s and can be described as a combination of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981; Maslach, Schaufeli, & Leiter, 2001). Emotional exhaustion, the central aspect of the burnout syndrome is often the most widely reported and analyzed; however, emotional exhaustion only captures the stress dimension of burnout and does not accurately reflect the difficult relationships individuals have with work (Maslach et al., 2001). Depersonalization, found in burnout research, is frequently the result of an individual who has been exhausted and is attempting to distance themselves from engaging with others (Maslach et al., 2001). Maslach, Schaufeli, and Leiter (2001) discussed that reduced personal accomplishment is more complicated and can involve exhaustion, depersonalization, or a combination of the two. Burnout has been described as an individual experience that is a form of job stress and has been linked to absenteeism, increased turnover, and decreased job satisfaction (Maslach et al., 2001).

Burnout in Healthcare

Burnout is a common problem that is documented in many healthcare specialties, to include physicians and nurses (Acker, 2011; Hyman et al., 2011; Studer, 2015, Van Der Colff & Rothmann, 2014). CRNAs were found to have high levels of stress in their personal and professional life, which resulted in a variety of symptoms to include high blood pressure, headaches, and inability to concentrate (Chipas & McKenna, 2011). In a study of Dutch Nurse Anesthetists, personality traits predicted burnout symptoms which in turn predicted turnover intentions (Meeusen et al., 2011). For CRNAs in the U.S., burnout was predicted by both work climate and personality traits (Mahoney, Lea, Jillson, & Meeusen, 2014). Professional burnout is a problem, and regardless of the type of medicine one practices, all health professionals are at risk for burnout (Griner, 2013).

EI and Burnout

EI is an emerging concept and is related to wellness, patient satisfaction, stress, and burnout. The high EI individual has been noted to be involved in professions involving social interactions, requiring direct contact, and interfacing with customers (Mayer, Salovey, & Caruso, 2008; Wong & Law, 2002). Additionally, the high EI individual is least likely to be involved with problem behaviors: such as smoking, drug abuse, violent outbursts, and excessive drinking (Mayer et al., 2008). Empathy, the ability to share another's emotions and a component of EI correlated with less burnout as well (Hojat, Vergare, Isenberg, Coen, & Spandorfer, 2015; Lamothe, Boujut, Zenasni, & Sultan, 2014). There have been studies discussing how individuals with a higher EI have

less burnout in counseling, nursing, and with resident physicians; however, there has not been research regarding the level of EI for CRNAs and the relationship to burnout.

Gutierrez and Mullen (2016) conducted a correlational analysis of 539 mental health, marriage, and family counselors to examine the relationship between trait EI and burnout. The researchers used the Counselor Burnout Inventory (CBI), a self-report measure to examine burnout and the Trait Emotional Questionnaire-Short Form (TEIQue-SF) also a self-report measure to assess EI (Gutierrez & Mullen, 2016). A significant relationship was noted between EI and counselor burnout and 38% of the variability in burnout could be attributed to EI (Gutierrez & Mullen, 2016).

In a cross-sectional study, 511 South African nurses were surveyed utilizing three scales: The Emotional Intelligence Scale (EIS) to measure EI, the MBI-HSS to measure burnout, and the Utrecht Work Engagement Scale to measure engagement (Nel et al., 2013). In addition to the survey, focus groups were conducted to measure job characteristics (Nel et al., 2013). A work-wellness model was introduced in the study; however, was found not to fit the data appropriately. Despite the results not matching the model, Nel et al. (2013) learned that there is a relationship between EI, job characteristics, and work wellness for nurses who work in South Africa. The researchers discussed that nurses who have high EI, also have better work wellness, and less burnout (Nel et al., 2013).

EI could be a strong predictor of well-being in healthcare professionals and help to alleviate the level of burnout. A self-report questionnaire was completed by 121 advanced practice nurses (APNs) to measure the variables of perfectionism, burnout, and

EI (Noh et al., 2016). EI was also found to be a significant variable reducing burnout among APNs in Korea (Noh et al., 2016).

Stress, burnout, and depression affects nurses as well as physicians and resident physicians. In a voluntary study conducted by Lin et al. (2016), 73 resident physicians completed four scales: The TEIQue-SF, the Dupuy Psychological General Well-Being Index (PGWBI), the MBI, and the Beck Depression Inventory-Short Form (BDI-SF). There was a strong correlation between EI and psychological well-being (Lin et al., 2016). Also, two of the three burnout measurements, emotional exhaustion, and depersonalization, inversely correlated with EI (Lin et al., 2016). EI may prove to be a beneficial tool in the prevention of burnout for healthcare professionals.

The effect of EI on burnout was studied by Nastasa and Farcas (2015) in the Romania medical system. One hundred twenty doctors and nurses between the ages of 26 and 52, completed the MBI and the Emotional Intelligence Scale (Nastasa & Farcas, 2015). The level of burnout did not correlate with the level of EI; however, there was a statistically significant correlation between a healthcare provider's personal accomplishment and the development of EI (Nastasa & Farcas, 2015).

Weng et al. (2011) observed that the links were unclear between a physician's EI, burnout, job satisfaction, and patient satisfaction. The WLEIS, as well as the MBI, was completed by 110 internists (Weng et al., 2011) to determine the relationship between the variables. Job satisfaction was measured with a questionnaire filled out by the same internists using three items rated on a 7-point Likert scale. Weng et al. found that there was a correlation between EI, burnout, and job satisfaction. Physicians with a higher EI

correlated with less burnout as well as higher job satisfaction; however, there was no association noted between a physician's EI and patient satisfaction (Weng et al., 2011).

In another study, 122 nurses were surveyed from four hospitals in South Africa to determine if there was a relationship between EI, stress, and burnout (Görgens-Ekermans & Brand, 2012). The Swinburne University Emotional Intelligence test (SUEIT), the Sources of Work Stress Inventory (SWSI), and the MBI-HSS were used as the measurement tools for the study. The researchers found there was an inverse relationship between EI, stress, and burnout; additionally, that EI is a moderator of the stress-burnout relationship (Görgens-Ekermans & Brand, 2012).

The inverse relationship between EI and burnout was studied in a sample of 148 health professionals in Greece by utilizing the MBI to measure the burnout syndrome and the TEIQue-SF to measure EI (Vlachou et al., 2016). The sample included doctors, nurses, and various therapists working in the rehabilitation field (Vlachou et al., 2016). Vlachou et al. (2016) discussed a correlation between high EI scores and low burnout scores. Furthermore, ones EI can not only influence but also predict burnout (Vlachou et al., 2016).

Forty general surgery residents were surveyed to evaluate how burnout was associated with EI and job performance (Cofer et al., 2018). The TEIQ-SF and the MBI was used as the survey tools (Cofer et al., 2018). Cofer et al. (2018) defined burnout as meeting two of the three burnout domains which are emotional exhaustion, depersonalization, and personal accomplishment. The United States Medical Licensing Examination (USMLE) and the American Board of Surgery In-Training Exam (ABSITE)

were standardized tests used to evaluate job performance as well as faculty evaluations to measure clinical milestones (Cofer et al., 2018). The mean global EI was noted to be lower in surgical residents with burnout compared to the residents without burnout (Cofer et al., 2018). High emotional exhaustion, high depersonalization, and low personal accomplishment were associated with global EI; however, there was no association between burnout and the USMLE scores, surgical milestones, or ABSITE percentiles (Cofer et al., 2018).

Summary of Literature Review

The construct of EI was first defined by Salovey & Mayer (1990) but gained greater popularity by Goleman in 1995. Since that time there have been numerous theories, models, and measurements for EI (Barchard et al., 2016). Scholarly research regarding EI has grown not only in the business world but also in the healthcare arena. There have been several studies supporting the correlation between high EI and lower burnout (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Noh et al., 2016; Vlachou et al., 2016; Weng et al., 2011). Görgens-Ekermans and Brand (2012) concluded that South African nurses higher EI was significantly related to lower stress and burnout. A positive relationship between EI and burnout was noted in a study of Greek healthcare professionals working in the rehabilitation arena (Vlachou et al., 2016). Lin et al. (2016) noted a strong inverse correlation between EI and emotional exhaustion and depersonalization, two of the burnout dimensions. Weng et al. (2011) found that the higher EI of doctors correlated not only with less burnout but also higher job satisfaction.

EI has been linked to successful leadership and personal excellence. EI has been related to wellness, job satisfaction, patient satisfaction, personality traits, stress, and burnout (Cofer et al., 2018, Görgens-Ekermans & Brand, 2012; Kim & Lee, 2016; Nel et al., 2013; Noh et al., 2016; Por et al., 2010; Weng et al., 2011). CRNAs are healthcare leaders who deliver anesthesia within the United States in various types of settings and have significant stress that can lead to burnout. The previous literature has argued that healthcare providers with higher levels of EI have less stress and burnout. If this is the case for CRNAs and there is an inverse relationship between EI and burnout, then incorporating EI into the current curriculum would be recommended. Exhibiting greater leadership qualities such as EI and experiencing less stress and burnout could increase job satisfaction, patient satisfaction, and interpersonal relationship with other healthcare providers.

EI has been shown to be a beneficial quality for many healthcare professionals; however, little is known about the level of EI for CRNAs or the relationship between EI and burnout. The purpose of this study was to fill the gap in the literature by determining if a relationship existed between the level of EI and burnout among CRNAs. Also, the purpose of the study is to examine if there was a relationship between the four EI dimensions and the overall level of burnout among CRNAs. Finally, this study was designed to investigate if there was a relationship between the overall level of EI and the three burnout domains. Stress and burnout are usual for healthcare professionals especially CRNAs and SRNAs. While EI may not be the panacea that the research has touted, EI has value for nursing and nurse administration (Smith, 2017; Vandewaa et al.,

2016). The future direction of CRNA related research should focus on the implementation of EI in the nurse anesthesia curriculum (Collins, 2013). If the deployment of an EI training program could improve the ability to read the personalities in the operating room and help solve issues that occur in the operating room, it would be extremely beneficial for CRNAs to participate in those training programs (King, 2016). Chapter 3 contains the detailed description of the current study's methodology, research design, variables, and participants.

Chapter 3: Research Method

Introduction

The purpose of this quantitative study was to survey a sample of the CRNA population to determine if there was a relationship between the level of EI and burnout syndrome among CRNAs. Also, this study examined the correlation between the four EI dimensions and the overall level of burnout among CRNAs and investigated the association between the overall level of EI and the three burnout domains. Personal excellence and successful leadership have been linked to individuals with a high EI (Delmatoff & Lazarus, 2014; Kivland, 2014). EI is an emerging topic in the healthcare literature (Hopkins, O'Neil, & Stoller, 2015; Nowacki et al., 2016; Stoller et al., 2013), yet the EI of CRNAs is unknown. Burnout has been linked to EI (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Vlachou et al., 2016; Weng et al., 2011); however, the relationship between EI and burnout syndrome had not been studied among CRNAs.

Chapter 3 reviews the methodology and data analysis plans for executing the proposed research to understand the relationship between a CRNA's EI and burnout syndrome. The research design and methodology are discussed as well as instrumentation. Finally, the data analysis plan is presented with a discussion of validity concerns and how ethical procedures were controlled.

Research Design and Rationale

A correlational quantitative exploratory research design was appropriate to examine the relationship between EI (independent variable) and burnout syndrome

(dependent variable) for CRNAs. The study was a national survey which was nonexperimental and took place in a natural environment without any influence from the researcher. A correlational design was chosen, and the goal was to examine the relationship between EI and burnout syndrome based on the answers from the survey. The study's population was a sample of certified and recertified CRNAs within the United States. Mann (2003) suggested that correlational studies are the best way to determine the relationship between variables and are quick and cheap. Data collection consisted of an online survey via SurveyMonkey. A link to the survey was distributed via email by the AANA to both certified and recertified CRNAs throughout the United States and made available to a Facebook group of CRNAs/SRNAs.

Methodology

Population

The target population of interest was CRNAs who were actively practicing anesthesia. It would be ideal to draw a sample that is representative of the CRNA population; however, a convenience sample would not be representative of the CRNA population within the United States. The NBCRNA (2017c) reported that at the end of the 2017 fiscal year (August 31, 2017) there were 49,746 CRNAs, including 47,309 recertified CRNAs and 2,437 newly certified CRNAs.

Sample and Sampling Procedures

The target population included certified and recertified CRNAs. Approximately 90% or 44,000 of certified and recertified CRNAs were members of the national AANA (AANA, 2016a). The AANA (2017b) reported that millions of Americans rely on

CRNAs for anesthesia care for maternity/obstetrics, as well as the elderly, military, and those in rural areas. CRNAs administer every type of anesthesia and work in collaboration with surgeons, obstetricians, podiatrists, and other qualified healthcare providers (AANA, 2017a). The AANA (2016a) reported that 43 million anesthetics are provided to patients within the United States each year.

The AANA has a policy for soliciting individuals to participate in research activities, and approval was obtained from the AANA Senior Director of Research. CRNAs' confidentiality was of utmost importance to the AANA; therefore, an email list could not be provided by the AANA. The sampling strategy consisted of a simple random sample of 3,000 CRNAs that were selected by the AANA, and those members were emailed a link to participate in the study. Because 3,000 members were randomly chosen out of a membership greater than 43,000, the sample was considered a convenience sample. The maximum number of email addresses that could be requested was 3,000. It should be noted that the AANA emailed one original email message with only one email response reminder.

A second sampling procedure was used to obtain statistical significance. CRNAs were solicited via an exclusive professional group page on Facebook, which required moderator approval to be included in the group. The CRNA and SRNAs group had over 20,000 members. Members could post regarding various topics, and other members had previously invited CRNAs to participate in research studies.

Sample size analysis is used for quantitative research designs and focuses on three critical pieces of information: statistical power, alpha, and effect size. The research was

intended to evaluate if there was a relationship between EI and burnout for CRNAs. The expectation is to find a relationship 80% (or .80), which was the power used to help determine sampling size by Radzvin (2011). For this study, the sample size was determined with a statistical power of .95 and an alpha level of .05, which was consistent with previous research. An alpha level of .05 means that there is a change of 5% that the researcher arrived at the wrong conclusion. To remain consistent with the literature, an effect size of .20 was used for this research for calculations in determining sample size. Statistical analyses included univariate tests and multivariate linear regression, adjusting for demographic characteristics. The goal of the study was to identify if there was a relationship between EI and burnout syndrome for CRNAs. The G*Power (version 3.1) for correlation with a one-tail test, an effect size of 0.2, an alpha of 0.05, and a power of 0.95 resulted in a sample size calculation of 262 participants.

Procedures for Recruitment, Participation, and Data Collection

The AANA was sent a request to solicit the members of the AANA to participate in the study. After approval of the study, the AANA emailed 3,000 participants a link to SurveyMonkey where the survey could be taken. The email contained a synopsis of the research and the purpose of the study. The email detailed that participation in the study was voluntary. Also, there would be no identifying information collected, and participants could exit the survey at any time.

CRNAs were also recruited via a closed group on Facebook. Along with an introduction to the researcher and the study, the requirements to participate were included as well as a link to the SurveyMonkey survey. To prevent duplicate entries from the

AANA emailed link and the members' Facebook post, the survey included a request for the AANA membership number; however, this was noted to be optional. This number was only to be used when cleaning data to prevent a CRNA from responding to the survey twice. Because this is a unique number assigned to CRNAs, data was protected in a secure file, and the CRNA's name was not linked to the AANA number.

Each member's consent to complete the survey was implied by their response to the survey. SurveyMonkey was the application for administering and collecting the survey data, which were available to be downloaded. There was no need to follow up with the participants once the survey was completed.

The survey included sections for EI, burnout syndrome, and CRNA demographics. EI was measured using the 16-item WLEIS. Burnout syndrome was measured using the 22-item MBI-HSS. Demographic information consisted of age, gender, ethnicity, family status, educational level, years of CRNA experience, and the AANA number. For statistical significance, the intent was to receive at least 300 completed surveys. The timetable for completion was one month with a secondary email being sent out by the AANA as a reminder after two weeks. Also, follow up posts on the Facebook member site were posted for several weeks after the initial post.

Instrumentation

WLEIS

The Consortium for Research on Emotional Intelligence in Organizations (CREIO, 2015) listed 10 EI measures that have been empirically tested and found in at least five published journal articles or books. The CREIO does not endorse any of the EI

tools; however, provides links for researchers to choose. Some researchers may select their tool based on popularity, the cost of the tool, complexity of the instrument, or based on the alignment with their theoretical framework.

The MSCEIT is an ability test designed to measure the four branches of Mayer and Salovey model (Mayer, Salovey, Caruso, & Sitarenios, 2003; Mayer & Salovey, 1997). The MSCEIT is the only EI test that is based on the ability model and a performance-based measure (Goldenberg, Matheson, & Mantler, 2006). Compared to the ability model, the mixed model is a combination of cognitive ability and personality variables. Goleman's mixed model approach can be measured by utilizing the emotional competencies of individuals (ECI) which are based on the emotional competencies work of Goleman (1998). The Emotional Quotient Inventory (EQ-i) is a self-report measure to assess the Bar-On model of emotional and social intelligence (Bar-On, 2004).

Trait EI represents the aspects of personality that relate to emotions and has also been labeled 'trait emotional self-efficacy' (Petrides et al., 2016). The TEIQue was developed by Petrides (2009) as a self-report inventory. Compared to performance-based measures, self-reported measures are considered trait EI (Kong & Zhao, 2013). Much of the research regarding EI is based on self-reports and is thus conducted under the scope of trait EI (Petrides et al., 2016). Another self-report test is the Schutte Self-Report Emotional Intelligence Scale (Schutte et al., 1998), where a Likert scale is used to identify trait EI rather than ability EI. The Schutte scale was developed based on the four-branch conceptual model of Salovey and Mayer (1990). The WLEIS was also developed based on the foundational theories of Salovey and Mayer (1990); however, advanced into

a four-dimensional definition as discussed by Davies et al. (1998), which consists of a mixture of various EI theories.

Wong and Law (2002) created a 16-item self-report EI instrument based on a 7-point Likert-type scale ranging from one (totally disagree) to seven (totally agree), which was labeled WLEIS. The tool was validated by Hojat et al. (2002) with a reported Cronbach's alpha of 0.81, comparable to the overall Cronbach's alpha of 0.78. Law, Wong, and Song (2004) later studied the construct and criterion validity of EI. Furthermore, Law et al. revealed that the limitation of self-reports, a threat to validity, could be overcome by incorporating multiple assessors in addition to the self-assessment. The WLEIS has been used for physicians, nurses, medical residents, and university students; however, the WLEIS had not been used with the CRNA population (Carvalho, Guerrero, Chambel, & Gonzalez-Rico, 2016; Kim & Lee, 2016; Libbrecht, Lievens, & Schollaert, 2010; Weng et al., 2011). The WLEIS was chosen as the EI measurement tool for this study for various reasons to include: alignment with trait EI, no cost for use, and decreased complexity for the participant.

MBI-HSS

The MBI-HSS, developed in 1981, has been the 'gold standard' for measuring experience burnout for an individual working in the healthcare and human services (Griner, 2013; Hyman et al., 2011; Maslach & Jackson, 1981; Schaufeli, Leiter & Maslach, 2009). Other instruments such as the Copenhagen Burnout Inventory (Kristensen, Borritz, Villadsen, & Christensen, 2005) and the Oldenburg Burnout Inventory (Demerouti, Bakker, Vardakou, & Kantas, 2003) have been used, but the MBI-

HSS has dominated the scientific research (Schaufeli et al., 2009). The MBI-HSS is a 22-item self-administered questionnaire, which applies a 7-point Likert scale and assesses emotional exhaustion, depersonalization, and personal accomplishment (Hyman et al., 2011; Lamothe et al., 2014). The MBI-HSS items were designed to measure feelings and attitudes ranging from zero (never) to six (every day), that are related to burnout syndrome (Maslach et al., 2016).

The MBI-HSS was chosen because it is the most effective tool when assessing burnout in the human service field, specifically people working with patients in healthcare settings like a CRNA. Various occupations have been studied using the MBI-HSS to include nurses, physicians, police officers, teachers, counselors, and mental health workers; however, the CRNA population had yet to be studied (Maslach et al., 2016). The Cronbach's coefficient alpha for the total scale was 0.83 (frequency) and 0.84 (intensity), subscale coefficients for emotional exhaustion 0.89 (frequency), personal accomplishment 0.74 (frequency) and 0.77 (frequency) for depersonalization (Maslach & Jackson, 1981). A meta-analysis of 84 samples reported that the mean alpha estimates across the domains fell within the 0.70 to 0.80 range (Wheeler, Vassar, Worley & Barnes, 2011). Test-retest reliability ranges from 0.50 to 0.82 were discussed by Leiter and Durup (1996).

Summary of Instrumentation Tools

The instruments for this correlational quantitative survey design were the WLEIS and the MBI-HSS. After obtaining permission from Mind Garden, the MBI-HSS was incorporated into one survey with the WLEIS and a series of demographic questions (see

Appendix A). The invitation to both the email version from the AANA and the Facebook group included a brief description of the survey and the implications for CRNAs (see Appendix B).

Operationalization

Emotional intelligence is the ability for one to manage their emotions, which was first described by Salovey and Mayer (1990). EI is a combination of identifying emotions, understanding emotions, and managing emotions. The four-dimensional definition as discussed by Davies et al. (1998) is a blend of EI theories. This study used the WLEIS to analyze the four-dimensions of EI: self-emotion appraisal (SEA) measures the individual's ability to understand emotions such as mood and thoughts, others' emotion appraisal (OEA) identifies the capacity to recognize and understand other people's emotions, use of emotion (UOE) represents the talent to motivate self and others, and regulation of emotion (ROE) which is the ability to control emotions (Davies et al., 1998; Fukada, Saklofske, Tamaoka, & Lim, 2012; Law et al., 2004; Wong & Law, 2002). The WLEIS is a survey tool that contains 16 Likert Scale questions on a 7-point scale and were coded as (1) totally disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, and (7) totally agree (Fukada et al., 2012; Law et al., 2004). The first four survey questions of the WLEIS were calculated to represent a score for the dimension self-emotion appraisal, questions 5-8 were calculated as a total to represent others' emotion appraisal, the next four questions 9-12 were calculated to represent the subscale use of emotion, and regulation of emotion, were measured with questions 13-16 (Fukada et al., 2012; Law et al., 2004; Wong & Law, 2002).

Burnout syndrome is a combination of three domains: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981; Maslach et al., 2001). The MBI-HSS is the most commonly used test when measuring an individual's feelings to their work environment and is the instrument that was applied in this study (Maslach et al., 2016; Mealer et al., 2016). A 7-point Likert scale for the MBI-HSS was designated as (0) never, (1) a few times a year or less, (2) once a month or less, (3) a few times a month, (4) once a week, (5) a few times a week, (6) every day (Maslach et al., 2016). Emotional exhaustion was calculated by a summation of responses from survey questions 1, 2, 3, 6, 8, 13, 14, 16 and 20 (Maslach et al., 2016). It should be noted that higher scores for emotional exhaustion indicate higher degrees of burnout (Maslach et al., 2016). Like emotional exhaustion, higher scores for depersonalization indicate more burnout. Survey questions 5, 10, 11, 15 and 22 were added together to assess depersonalization (Maslach et al., 2016). Personal accomplishment was computed from survey questions 4, 7, 9, 12, 17, 18, 19 and 21 (Maslach et al., 2016; Weng et al., 2011). Low scores of personal accomplishment correspond with greater burnout.

The data collected from the WLEIS, MBI-HSS and demographic information were downloaded into SPSS, where descriptive and inferential statistics were conducted. The demographic characteristics for this study included the CRNAs age, gender, ethnicity, marital status, educational level, and years of CRNA experience. Age was grouped into five categories 20-29, 30-39, 40-49, 50-59 and 60 and over. Gender was either male or female. Ethnicity was categorized as White, African American, Hispanic, American Indian, or Asian. Family status was grouped as single, married, divorced,

widow, or live together. Educational level was bachelor's degree, master's degree, or doctoral degree. Years of CRNA experience was grouped as 0-5 years, 5-10 years, 10-20 years, 20-30 years, 30-40 years, and 40+ years.

Data Analysis Plan

Data was collected through an online survey using SurveyMonkey. The AANA, the national organization for CRNAs, sent out an email to a randomized sample of certified and recertified CRNAs chosen from the organization's national database. The email contained a link to SurveyMonkey where the survey could be taken. Practicing CRNAs were also recruited via a closed Facebook group. Instruments for the data collection were the WLEIS and the MBI-HSS. Demographic questions were part of the survey and included age, gender, ethnicity, family status, educational level and years of CRNA experience. The CRNA's AANA membership number was requested to assure there were no duplicate surveys. The membership number was not connected to members' personal information, and all data was kept confidential.

Data were analyzed using SPSS version 24, which was cleaned and screened. Individual cases were eliminated for missing values. Descriptive analysis and inferential statistics were conducted. The data was analyzed to determine if a correlation existed between the variables. The following research questions were examined:

RQ1: What is the relationship between the level of EI and burnout syndrome for CRNAs?

H_o1*:* No relationship exists between the level of EI and burnout syndrome for CRNAs.

H_a1: A relationship exists between the level of EI and burnout syndrome for CRNAs.

RQ2: What is the relationship between the overall burnout score and the four dimensions of EI (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) for CRNAs?

H_o2: No relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

H_a2: A relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

RQ3: What is the relationship between the overall level of EI and the three dimensions of burnout syndrome (emotional exhaustion, depersonalization, and diminished personal accomplishment) for CRNAs?

H_o3: No relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

H_a3: A relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

Descriptive Statistics

For this quantitative research study, descriptive statistics were used to represent a significant amount of data. Both frequencies and percentages were reported for participant demographics and presented in a summary and graphic analysis. The descriptive statistics mean, standard deviations, minimum and maximum are

communicated for the level of EI, and the four subscales of EI, as well as burnout syndrome and the three domains of burnout.

Inferential Statistics

The purpose of this quantitative study was to determine if there was a relationship between the level of EI and burnout among CRNAs. This study also examined the relationship between the four EI dimensions and the overall level of burnout among CRNAs and investigated the relationship between the overall level of EI and the three burnout domains. A survey was deployed to measure the level of EI with the WLEIS and burnout with the MBI-HSS for CRNAs.

Pearson's correlation coefficient and Spearman's correlation coefficient are two tests to measure the strength of a relationship between two variables (Field, 2013). While both tests measure an association between variables, the Spearman's correlation coefficient is used when either variable is ordinal or interval, compared to Pearson's correlation coefficient which is used when both variables are interval and normally distributed (McCrum-Gardner, 2008). The Pearson's correlation coefficient is a highly robust statistical test and designated for parametric tests as opposed to the Spearman's correlation coefficient which does not rely on the assumptions of parametric tests (Field, 2013). The Pearson's correlation coefficient was calculated and reported for this quantitative study. There has been disagreement in the literature whether Likert scale data could be used for parametric testing because it is an ordinal scale of measurement; however, for this study, parametric tests were used to analyze Likert scale responses (Jamieson, 2004; McCrum-Gardner, 2008; Norman, 2010, Sullivan & Artino, 2013).

The purpose of correlational statistics is to examine if there is a relationship between the variables. The Pearson's correlation coefficient was employed to determine the strength of the linear relationship between the two variables, and a regression analysis was used to assess the predictability of the relationship (Field, 2013).

For the first research question, a simple linear regression was used to see how EI, the independent variable, correlates with burnout syndrome, the dependent variable, among CRNAs. The Pearson's correlation coefficient (r) was used to test the hypothesis to determine if there was a positive correlation (Value of +1), no relationship (value of 0), or a negative correlation (value of -1) between EI and burnout syndrome. The correlation coefficient can be interpreted as a small effect with values of +/- 0.1, a medium effect with coefficients +/- 0.3, and a large effect with values +/- 0.5 (Field, 2013). Significance was determined at $p < 0.05$. The variability of the relationship could be determined by assessing regression equation, precisely the adjusted R-squared from the values listed in the regression analysis (Field, 2013; Lin et al., 2016).

To answer the second research question, a multiple linear regression (with the enter method) was conducted to determine if a relationship existed between the dependent variable of burnout syndrome and each of the four dimensions of EI: self-emotion appraisal, others' emotion appraisal, use of emotions, and regulation of emotion. The hypothesis was tested using the t-test of the significance of each of the four EI dimension variables in the multiple linear regression model. Significance was determined at $p < 0.05$. Reviewing the model summary, the variability of burnout syndrome can be determined by looking at the adjusted R-squared (Field, 2013; Lin et al., 2016). I then

extrapolated the results from the coefficients table to determine how much the burnout syndrome could be changed by each EI dimension. Besides, it allowed me to identify which aspect of EI was driving the relationship.

The third research question was addressed with three separate multiple linear regressions to identify how EI was related to the different types of burnout: emotional exhaustion, depersonalization, and diminished personal accomplishment. I was able to determine the relationship between a CRNAs EI and each burnout dimension. The hypothesis was tested using the t-test of the significance of the EI variable in each of the three multiple linear regression models. Significance was determined at $p < 0.05$.

Threats to Validity

Internal Validity

Concerns regarding internal validity could come from the survey instrument. For a tool to be valid, it must first be reliable which is done by calculating a Cronbach alpha coefficient (Rickards, Magee & Artino, 2012). The WLEIS was validated with a reported Cronbach's alpha of 0.81, which was comparable to the overall Cronbach's alpha of 0.78 (Hojat et al., 2002). The Cronbach's coefficient alpha for the MBI-HSS total scale was 0.83 (frequency) and 0.84 (intensity), subscale coefficients for emotional exhaustion 0.89 (frequency), personal accomplishment 0.74 (frequency) and 0.77 (frequency) for depersonalization (Maslach & Jackson, 1981). A combination of the WLEIS instrument with the MBI-HSS could be a potential threat to validity because the two are independent surveys that were combined into one for this study. Also, the WLEIS and the MBI-HSS had not previously been used on the CRNA population.

Threats to the internal validity other than the instrument were selection bias and the Hawthorne effect. This correlational quantitative research design was a convenience sample, and the population was selected in a non-random manner; therefore, selection bias would be a potential threat to internal validity (Pannucci & Wilkins, 2010). The population's attitude and behavior towards the study could also be a potential threat to validity, called the Hawthorne effect (McCambridge, Witton & Elbourne, 2014).

External Validity

External validity refers to the generalizability of the findings of the study and how relevant they are to the population. A limitation of this study was that the sample of CRNAs was a convenience sample and may not be representative of the population, a potential threat to validity (Mann, 2003). Additionally, the WLEIS and the MBI-HSS are self-report instruments; hence, there are concerns that the sample could potentially overestimate their abilities. The participants may not want to answer the questions truthfully with fear that CRNAs could be negatively perceived. Finally, with a survey instrument where there is no researcher involvement, there could be a misunderstanding of the questions being asked (Fowler, 2014). Achieving statistical significance with a sufficient sample size was also a potential threat to validity.

Ethical Concerns

The plan for this quantitative survey research was to correctly follow the AANA guidelines to recruit CRNA participants through the AANA Research Division. The AANA sent the emails with a direct link to SurveyMonkey, so the member's personal information could remain anonymous. The email contained a brief synopsis of the

research study with my contact information for further questions. Practicing CRNAs were also recruited to participate in the study from a professional CRNA/SRNA group Facebook page that was controlled by a small group of moderators. The participant's consent to do the survey was implied merely by them answering the survey and participants could withdraw from the study at any point. The research project was submitted to Walden University's Institutional Review Board (IRB), and all non-identifying information was kept in an electronic password protected file. The plan is to destroy the data after the minimum amount of time safely has been allotted from the time of data collection.

Summary

This chapter is a set of detailed plans for executing the purpose of this study, which was to determine if there was a relationship between the level of EI and burnout for CRNAs. Chapter 3 also reviewed the quantitative research design and the rationale for that chosen strategy. Additionally, the research methodology was presented which encompasses a discussion of the population, sampling procedures, procedures for recruitment, data collection instruments and the data analysis plan to test the hypothesis. A plan to examine the relationship between EI, the independent variable, and the dependent variable, burnout syndrome for CRNAs was reviewed. Finally, a discussion of the validating concerns was addressed as well as how the ethical procedures would be controlled. Chapter 4 detailed further results from the survey and described the study's findings.

Chapter 4: Results

Introduction

This chapter includes the detailed results of the study. The purpose of the study was first to determine the relationship between the level of EI and burnout syndrome among CRNAS. The purpose was also to examine if there was a relationship between the four EI dimensions (self-emotion, others' emotion appraisal, use of emotions, and regulation of emotion) and the overall burnout among CRNAs. Finally, this study was designed to determine the relationship between the overall EI and the three burnout domains (emotional exhaustion, depersonalization, and personal accomplishment) for CRNAs. Three research questions were used for the study, and responses from participants were analyzed. The research questions for the study are as follows:

RQ1: What is the relationship between the level of EI and burnout syndrome for CRNAs?

H_o1*:* No relationship exists between the level of EI and burnout syndrome for CRNAs.

H_a1: A relationship exists between the level of EI and burnout syndrome for CRNAs.

RQ2: What is the relationship between the overall burnout score and the four dimensions of EI (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) for CRNAs?

H_o2*:* No relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

H_a2: A relationship exists between the overall burnout score and the four dimensions of EI for CRNAs.

RQ3: What is the relationship between the overall level of EI and the three dimensions of burnout syndrome (emotional exhaustion, depersonalization, and diminished personal accomplishment) for CRNAs?

H_o3: No relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

H_a3: A relationship exists between the overall level of EI and the three dimensions of burnout for CRNAs.

The survey used for this study, to answer the research questions, was a collection of the WLEIS, the MBI-HSS, and a set of demographic questions from CRNAs. Permission was obtained to use the WLEIS (see Appendix C). Permission was also obtained from Mind Garden to use the MBI-HSS survey (see Appendix D).

Chapter 4 reviews the data collection with regards to the recruitment and response rates, as well as the time frame for the data collection. The baseline descriptive and demographic characteristics of the sample were discussed as well as its representativeness. Finally, the results of the statistical analysis were organized according to the three research questions and included tables and figures to illustrate the results.

Data Collection and Analysis

The study was approved through Walden University IRB (#12-21-17-0406018), with an expiration date of December 20, 2018. The sample used for the study was a population of CRNAs, who were actively practicing anesthesia within the United States.

The NBCRNA, (2017c) reported that at the end of the 2017 fiscal year (August 31, 2017) there were 49,746 CRNAs, including 47,309 recertified CRNAs and 2,437 newly certified CRNAs.

CRNAs were solicited via an exclusive professional group page on Facebook with a posting on the CRNAs and SRNAs group which has over 20,000 members. The post was first placed on Facebook on December 21, 2017 and was subsequently posted two additional times on December 26, 2017 and December 30, 2017. The Facebook post had a brief description of the study, implications for CRNAs, and the consent form for the study. A link to SurveyMonkey was included in the Facebook post. Two hundred fifty-four surveys were started; however, only 222 of those surveys were completed.

A second sampling method was used which included an application to the AANA. After approval from the AANA Senior Director of Research, emails were distributed to 3,000 CRNAs who were randomly selected by the AANA. Seven days prior to the closure of the study, a reminder email was sent to the CRNAs who were initially selected. The email had a brief description of the study, implications for CRNAs, and the consent form for the study. It should be noted the AANA requested optional language to be included with the last demographic question asking for AANA membership identification. This was a discrepancy from the original plan presented in Chapter 3. Otherwise the data collection went as planned. Over 17 days, 300 surveys were opened with only 284 completed. This makes the response rate of the emailed survey 9.5% and is considered a realistic range with an online survey.

Data collection time was a total of 45 days, from the initial Facebook post on December 21, 2017 to February 3, 2018. The number of participants who completed the survey was $N = 506$. The sample size desired was 262, which was calculated using a G*Power version 3.1 for correlation: a one-tail test with an effect size of 0.2, an alpha of 0.05, and the power at 0.95.

Preliminary Data Management

Data was entered in SPSS version 24. Before conducting the analyses, I screened for missing data, inaccuracies, and replication of the membership number. From the original dataset, 48 entries were removed due to lack of completion of the entire survey. The final dataset contained answers to the WLEIS portion of the survey, responses to the MBI-HSS portion of the survey, and demographic information.

The WLEIS contained 16 Likert scale questions on a 7-point Likert scale and was coded for analysis as follows: (1) totally disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, and (7) totally agree. After the data was cleaned and screened, the first 16 Likert scale questions which represented the WLEIS were averaged for each participant to yield a total EI score. Questions 1-4 of the WLEIS, were averaged to represent self-emotion appraisal. Questions 5-8 were averaged to represent others' emotion appraisal, while questions 9-12 were averaged to represent use of emotion and questions 13-16 were averaged to represent regulation of emotion.

The MBI-HSS contained 22 Likert scale questions on a 7-point scale. Additionally, the MBI-HSS is comprised of three distinct sections (emotional exhaustion, depersonalization, and personal accomplishment). The data was initially coded as

follows: (0) never, (1) a few times a year or less, (2) once a month or less, (3) a few times a month, (4) once a week, (5) a few times a week, and (6) everyday. Emotional exhaustion included the sum of items 1, 2, 3, 6, 8, 13, 14, 16, and 20, which was then divided by nine to represent the mean of emotional exhaustion (Maslach et al., 2016). Depersonalization included the sum of items 5, 10, 11, 15, and 22, which was then divided by 5 to represent the mean of depersonalization (Maslach et al., 2016). Usually, the 8-item personal accomplishment scale was the sum or average of items 4, 7, 9, 12, 17, 18, and 21, which assesses the feelings of accomplishment and achievement in one's work (Maslach et al., 2016). Higher scores of emotional exhaustion and depersonalization indicates a higher degree of burnout; however, a lower score of personal accomplishment suggests a higher degree of burnout. To align the three domains so that each higher score represents higher burnout, items 4, 7, 9, 12, 17, 18, 19, 21 were reverse coded and then were labeled diminished personal accomplishment. The reverse coding was coded as follows: (0) everyday, (1) a few times a week, (2) once a week, (3) a few times a month, (4) once a month or less, (5) a few times a year or less, and (6) never. After the reverse coding occurred, the final dataset was used to score the three domains of the MBI-HSS. The mean responses were calculated for the items that make up each scale.

For this study, items 1, 2, 3, 6, 8, 13, 14, 16, and 20 were coded, and then the mean of the nine items was calculated to represent the emotional exhaustion. Items 5, 10, 11, 15, and 22 were coded, and then the mean of the five items was calculated to represent depersonalization. Items 4, 7, 9, 12, 17, 18, 19, and 21 were reverse coded, and then the mean of the eight items was calculated to represent diminished personal

accomplishment. A mean total score of burnout syndrome was derived from the sum of the standard coded items and the reverse coded items, which was then divided by 22 to represent the mean of the burnout syndrome.

Descriptive Statistics

Frequencies and Percentages

Baseline descriptive analyses were conducted on demographic information, including age, gender, ethnicity, family status, highest educational level and years of experience. The majority of participants were female (373 of 506, 74%), white (459 of 506, 91%) and indicated that they had more than five years of CRNA experience (413 of 506, 82%). Regarding age, 2% were 20-29, 29% were 30-39, 26% were 40-49, 26% were 50-59, and 17% were greater than 60. The majority of participants indicated they were married (385 of 506, 76%) and their highest degree attained was a master's degree (399 of 506, 79%). Frequencies and percentages for the demographic characteristics are presented in Table 1.

Table 1

Frequencies and Percentages for Demographics (N = 506)

Characteristics	Number	Percentage
Age		
20 to 29	10	2
30 to 39	145	29
40 to 49	134	26
50 to 59	130	26
60 and above	87	17
Gender		
Male	133	26
Female	373	74
Ethnicity		
White	459	91
African American	9	2
Hispanic	13	3
American Indian	2	<1
Asian	10	2
Other	13	3
Family Status		
Single	50	10
Married	384	76
Divorced	42	8
Widow	7	1
Live Together	23	5
Highest Educational Level		
Bachelor's Degree	40	8
Master's Degree	398	79
Doctoral Degree	68	13
Years of CRNA Experience		
0 to 4	93	18
5 to 9	104	21
10 to 14	82	16
15 to 19	55	11
20 to 24	59	12
25 to 29	44	9
30 to 34	28	6
35 to 39	25	5
40+	16	3

Note: Due to rounding, percentages may not add up to 100.

Descriptive Analysis of Variables, Reliability, and Constructs

In this study, the Cronbach's alpha (α) for the participants' variables ranged from 0.69 to 0.93, which was mostly acceptable (see Table 2). The Cronbach's α usually increases as the correlations among test items increase and is known as the internal consistency. The value of 0.7 to 0.8 is considered an acceptable range, lower scores indicate an unreliable or questionable scale (Field, 2013). It should be noted that a large number of questions generally yield a larger value; therefore, the Cronbach's α should be applied separately to the subscales (Field, 2013). The subscales for both the WLEIS and the MBI-HSS with the corresponding Cronbach's α can be found in Table 2.

Table 2

Descriptive Analysis for Variables' Reliability and Constructs (N = 506)

Variable	Cronbach's α reliability	Mean	SD	Min	Max
Emotional Intelligence					
SEA	0.84	5.94	0.76	2.00	7.00
OEA	0.82	5.51	0.84	2.25	7.00
UOE	0.69	6.02	0.70	2.75	7.00
ROE	0.88	5.29	1.04	1.00	7.00
Total EI	0.87	5.69	0.60	3.31	7.00
Burnout					
EE	0.93	2.38	1.32	0.00	5.78
DP	0.73	1.23	1.06	0.00	5.40
DPA	0.76	1.00	0.76	0.00	3.62
Total Burnout	0.91	1.62	0.88	0.00	4.45

SEA = self-emotion appraisal; OEA = others' emotion appraisal; UOE = use of emotion; ROE = regulation of emotion; EE = emotional exhaustion; DP = depersonalization; DPA = diminished personal accomplishment

To check the reliability of the WLEIS scale, a Cronbach's α was conducted for the 16 questions used in the scale and then done for the four subscales. The Cronbach's α

value for the total EI score was calculated to be 0.87. The Cronbach's α for the four subscales are as follows: self-emotion appraisal which represents questions 1-4 of the WLEIS and was calculated to be 0.84, others' emotion appraisal which represents questions 5-8 of the WLEIS and was calculated to be 0.82, use of emotion which represents items 9-12 of the WLEIS and was calculated to be 0.69, and regulation of emotion which represents questions 13-16 of the WLEIS and was calculated to be 0.88.

Reliability of the MBI-HSS, the Cronbach's α value was calculated to be 0.91, suggesting an excellent internal consistency. The Cronbach's α for the three subscales are as follows: emotional exhaustion was calculated to be 0.93, depersonalization was calculated to be 0.73, and diminished personal accomplishment was calculated to be 0.76.

Means and standard deviations for EI, burnout syndrome, and the subscales are presented in Table 2. For EI scores, response options spanned from 1.00 to 7.00; observations ranged from 1.00 to 7.00, with an average observation of 5.69 (SD = 0.60). It should be noted, 89% of the participants scored 5.0 or higher on their WLEIS, which aligned with the respondents choosing "somewhat agree" to the 16 statements. 70% of the respondents scored 5.5 or higher on their total WLEIS which indicated high EI. The means and standard deviations for the WLEIS subscales are as follows: average observation for self-emotion appraisal 5.94 (SD = 0.76), average observation for others' emotion appraisal 5.51 (SD = 0.84), average observation for use of emotion 6.02 (SD = 0.70), and average observation for regulation of emotion 5.29 (SD = 1.04).

For burnout syndrome scores, response options spanned from 0.00 to 6.00; observations ranged from 0.00 to 5.78, with an average observation of 1.62 (SD = 0.88).

The means and standard deviations for the MBI-HSS subscales are as follows: average observation for emotional exhaustion 2.38 (SD = 1.32), average observation for depersonalization 1.23 (SD = 1.06), and average observation for diminished personal accomplishment 1.00 (SD = 0.76).

Detailed Results

Research Question 1

RQ1: What is the relationship between the level of EI and burnout syndrome for CRNAS?

To determine if a relationship existed for the total score of EI and the total score of burnout syndrome for CRNAs, I used the WLEIS and the MBI-HSS. To assess the relationship between EI and burnout syndrome, Pearson's correlation coefficient (*r*), was conducted. The Pearson coefficient was conducted due to the assumption of utilizing the Likert Scale as an interval level data and was determined to be *r* =.387 (Table 3). Field (2013) stated that a coefficient of *r* =.10 was considered a small effect, *r* =.30 a medium effect, and *r* =.50 a large effect. The results of this coefficient analysis conclude that there is a positive correlation between EI and burnout syndrome.

Table 3

Model Summary for EI and Burnout Syndrome (N = 506)

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.387[a]	.150	.148	.810

a. *Predictors: (Constant), Emotional Intelligence*

A scatterplot was constructed with EI as the independent variable (x-axis) and burnout syndrome as the dependent variable (y-axis). The scatterplot showing the linear

relationship between burnout syndrome and EI is shown in Figure 3. Overall burnout syndrome is predicted fairly well from EI. The linear regression analysis was conducted to evaluate the prediction of burnout syndrome from EI. The regression equation for predicting the overall burnout is: *Burnout Syndrome* = - 0.57 *Emotional Intelligence* + 4.84.

To further examine the relationship between EI and burnout syndrome a simple linear regression was used to see how EI, the independent variable, correlated with burnout syndrome, the dependent variable. The confidence interval, set at 95%, for the slope, -.684 to -.448 did not contain the value of zero, and indicated that EI is significantly related to burnout syndrome (Table 4). The correlation between burnout syndrome and EI was -.387. The r^2 value for the linear regression was calculated to be .150 (Table 3), which indicated that 15% of the variability in burnout could be explained by EI. The t-test for total EI was significant with significance set at $p < 0.05$ (t-statistic = -9.415, p =.000) with burnout syndrome. Due to the analysis results, the null hypothesis was rejected. Thus, the alternative hypothesis was accepted which concludes that a relationship exists between the level of EI and burnout syndrome for CRNAs.

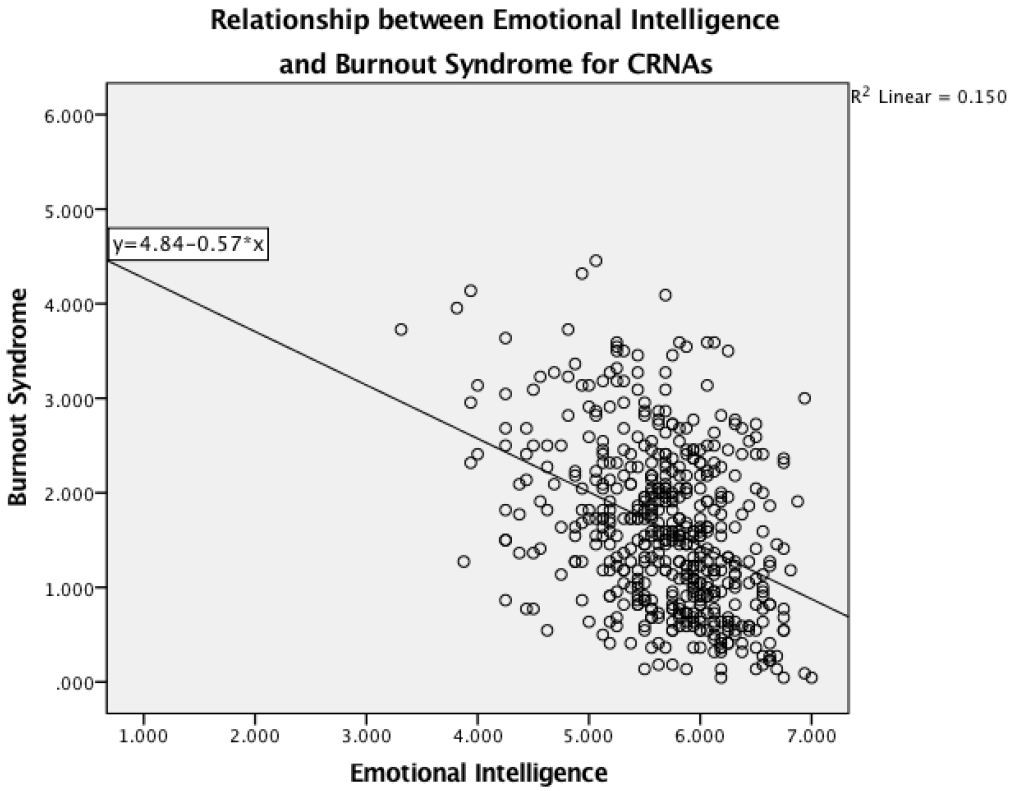

Figure 3. EI and burnout scatterplot

Table 4

Linear Regression for EI and Burnout Syndrome (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	4.836	.344	14.069	.000	4.161	5.512
Total EI	-.566	.060	-9.415	.000	-.684	-.448

a. Dependent Variable: Burnout Syndrome

The dependent variable, burnout syndrome, was then changed to a log-transformation so the coefficient could be more interpretable. A linear regression was

then run with the dependent variable log-transformed. Translating a log-transformed variable is routinely understood as a percent change rather than the standard interpretation of a change in units. When the burnout syndrome, was log-transformed, the regression equation is: ln (*Burnout Syndrome*) = *1.27 - .20*EI* (EI = emotional intelligence) (Table 5). Every unit of change in EI resulted in a 20% change in the burnout syndrome. The coefficient of the burnout syndrome variable was $\beta_1 = -0.20$; therefore, as the score of EI increases for one-unit, the model provides a reduction of burnout syndrome by 20%.

Table 5

Log-Linear Regression for EI and Burnout Syndrome (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	1.266	.121	10.483	.000	1.029	1.503
Total EI	-.201	.021	-9.505	.000	-.242	-.159

a. Dependent Variable: log of Burnout Syndrome

Research Question 2

What is the relationship between the overall burnout score and the four dimensions of EI (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) for CRNAs?

To determine if a relationship existed for the overall score of burnout syndrome for CRNAs and the four dimensions of EI, I used the WLEIS and the MBI-HSS. To assess the relationship between the four dimensions of EI (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) and burnout syndrome, a

multiple linear regression model with enter method was used. The r^2 value for the linear regression was calculated to be .166 (Table 6), which indicated that 16.6% of the variability of burnout syndrome could be explained by the four dimensions of EI. The model is important for the explanation of the variability of burnout syndrome with significance set at $p < 0.05$ ($F = 24.954$, $p = .000$) (Table 7). Additionally, the following equations show the results for the coefficients table and the negative effect of the factors of self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion. *Burnout syndrome = -.211 x SEA = .014 x OEA - .094 x UOE - .197 x ROE +4.557* (SEA = self-emotion appraisal, OEA = others emotion appraisal, UOE = use of emotion, ROE = regulation of emotion).

Table 6

Model Summary for Burnout Syndrome and Four Dimensions of EI (N = 506)

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.408[a]	.166	.159	.805

a. Predictors (Constant) SEA = self-emotion appraisal; OEA = others' emotion appraisal; UOE = use of emotion; ROE = regulation of emotion

The regression coefficients of burnout syndrome, self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion were listed in Table 8. The t-test with significance set at $p < 0.05$ for the four EI dimensions showed the more important factors were self-emotion appraisal (t-statistic = -.3.598, $p = .000$) and regulation of emotion (t-statistic = -4.732, $p = .000$) and less important factors of others' emotion appraisal (t-statistic = -.298, $p = .766$) and use of emotion (t-statistic = -1.676, $p = .094$). Due to the analysis results, the null hypothesis was rejected that no relationship

existed between the overall burnout score and the four dimensions of EI for CRNAs. The alternative hypothesis was accepted, that a relationship existed between the overall burnout score and the dimensions of EI for CRNAs. It should be noted that there was a significant relationship between two of the EI dimensions (self-emotion appraisal and regulation of emotion) and burnout syndrome for CRNAs.

Table 7

ANOVA for Burnout Syndrome and Four Dimensions of EI (N = 506)

Model	Sum of Squares	*df*	Mean Square	F	Sig.
Regression	64.710	4	16.177	24.954	.000[a]
Residual	324.800	501	.648		
Total	389.510	505			

Table 8

Linear Regression for Burnout Syndrome and Four Dimensions of EI (N = 506)

Model	Unstandardized Coefficients			
	B	Std. Error	*t*	Sig.
Constant	4.557	.386	11.821	.000
SEA	-.211	.059	-3.598	.000
OEA	-.014	.046	-.298	.766
UOE	-.094	.056	-1.676	.094
ROE	-.197	.042	-4.732	.000

SEA = self-emotion appraisal; OEA = others' emotion appraisal; UOE = use of emotion; ROE = regulation of emotion

The dependent variable, burnout syndrome, was log-transformed and a multiple linear regression model with the enter method was used (Table 9). A relationship, with significance set at $p < 0.05$, existed between two of the EI dimensions (self-emotion appraisal and regulation of emotion) and the log of burnout syndrome for CRNAs. Every

unit of change in self-emotion appraisal resulted in a 7.3% change in the burnout syndrome. This estimated coefficient of the log of burnout syndrome variable was $\beta_1 = -0.073$; therefore, as the score of self-emotion appraisal increased by one-unit, the model provided a reduction of burnout syndrome by 7.3%. Furthermore, every unit of change in the regulation of emotion resulted in a 6.6% change in the burnout syndrome. This estimated coefficient of the log of burnout syndrome variable was $\beta_1 = -0.066$; therefore, as the score of regulation of emotion increased by one-unit, the model provides a reduction of burnout syndrome by 6.6%.

Table 9

Log-Linear Regression for Burnout Syndrome and Four Dimensions of EI (N = 506)

Model	Unstandardized Coefficients			
	B	Std. Error	*t*	Sig.
Constant	1.191	.136	8.775	.000
SEA	-.073	.021	-3.560	.000
OEA	-.008	.016	-.513	.608
UOE	-.039	.020	-1.979	.048
ROE	-.066	.015	-4.488	.000

SEA = self-emotion appraisal; OEA = others' emotion appraisal; UOE = use of emotion; ROE = regulation of emotion

Research Question 3

What is the relationship between the overall level of EI and the three dimensions of burnout (emotional exhaustion, depersonalization, and diminished personal accomplishment) for CRNAs?

To determine if a relationship existed for the total score of EI and the three dimensions of burnout syndrome for CRNAs, I used the WLEIS and the MBI-HSS. To

assess the relationship between EI and emotional exhaustion, one of the burnout dimensions, Pearson's correlation coefficient (*r*), was conducted. The Pearson's coefficient was done due to the assumption of utilizing the Likert Scale as an interval level data and was determined to be *r* = .268 (Table 10). The results of this coefficient analysis conclude that there was a small correlation between EI and emotional exhaustion.

Table 10

Model Summary for EI and Emotional Exhaustion (N = 506)

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.268[a]	.072	.070	1.278

a. Predictors: (Constant), Emotional Intelligence

A scatterplot (Figure 4) was constructed with EI (x-axis) and emotional exhaustion (y-axis) to demonstrate the linear relationship between EI and emotional exhaustion, which was conducted to evaluate the prediction of emotional exhaustion from EI. The scatterplot indicated that a positive correlation existed between higher EI scores and emotional exhaustion. To further examine the relationship between EI and emotional exhaustion, a simple linear regression was used to see how EI, the independent variable, correlated with emotional exhaustion, the dependent variable. The confidence interval, set at 95%, for the slope, -.777 to -.404 did not contain the value of zero, and therefore EI was significantly related to emotional exhaustion (Table 11). The r^2 value for the linear regression was calculated to be .072 (Table 10), which indicated that 7.2% of the variability in emotional exhaustion could be accounted for by EI. Additionally, a regression equation of $EE = -.590 \times EI + 5.74$ (EE = emotional exhaustion, EI =

emotional intelligence) was composed out of the values listed from the linear regression (Table 11). The t-test for total EI was significant with significance set at $p < 0.05$ (t-statistic = - 6.235, $p = .000$) with the dependent variable emotional exhaustion. Due to the analysis results, the null hypothesis was rejected. Thus, the alternative hypothesis was accepted which concluded that a relationship exists between the level of EI and emotional exhaustion for CRNAs.

Table 11

Linear Regression for EI and Emotional Exhaustion (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	5.740	.542	10.593	.000	4.675	6.804
Total EI	-.590	.095	-6.235	.000	-.777	-.404

a. *Dependent Variable: Emotional Exhaustion*

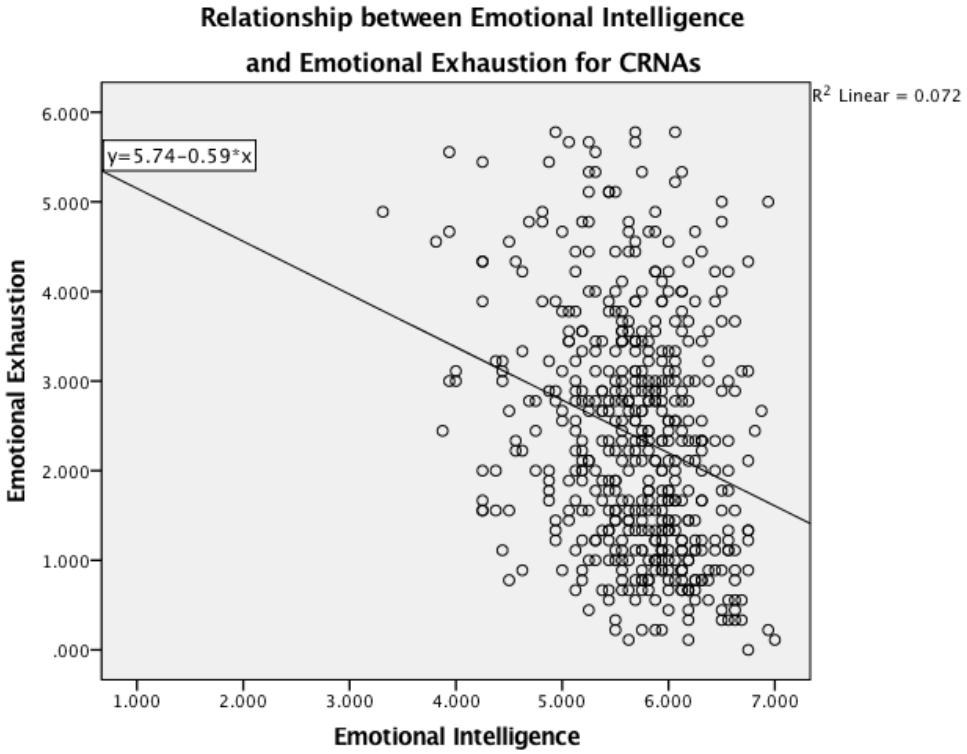

Figure 4. EI and emotional exhaustion scatterplot

The dependent variable, emotional exhaustion, was then changed to a log-transformation so the coefficient could be more interpretable. Linear regression was then run with the dependent variable log-transformed. When the dependent variable, emotional exhaustion, was log-transformed, the regression equation was *ln (EE) = .975 – 0.84*EI* (EE = emotional exhaustion, EI = emotional intelligence) (Table 12). Every unit of change in EI would result in an 8.4% change in the emotional exhaustion. This estimated coefficient of the log of emotional exhaustion variable was $\beta_1 = -0.84$; therefore, as the score of EI increased for one unit, the model provided a reduction of emotional exhaustion by 8.4%.

Table 12

Log-Linear Regression for EI and Emotional Exhaustion (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	.975	.073	13.394	.000	.832	1.118
Total EI	-.084	.013	-6.643	.000	-.109	-.059

a. Dependent Variable: log of Emotional Exhaustion

Relationship between overall EI and depersonalization

To assess the relationship between EI and depersonalization, the second of the burnout dimensions, Pearson's correlation coefficient (*r*), was conducted. The Pearson coefficient was conducted due to the assumption of utilizing the Likert Scale as an interval level data and was determined to be *r* =.296 (Table 13). A coefficient of *r* = .30 would be considered a medium effect (Field, 2013). The results of this coefficient analysis conclude that there was a positive correlation between EI and depersonalization.

Table 13

Model Summary for EI and Depersonalization (N = 506)

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.296[a]	.088	.086	1.011

a. Predictors: (Constant), Emotional Intelligence

A scatterplot (Figure 5) was constructed with EI (x-axis) and depersonalization (y-axis) to demonstration the linear relationship between EI and depersonalization, which was conducted to evaluate the prediction of depersonalization for EI. There was a positive correlation that existed between higher EI scores and depersonalization which was indicated with the scatterplot.

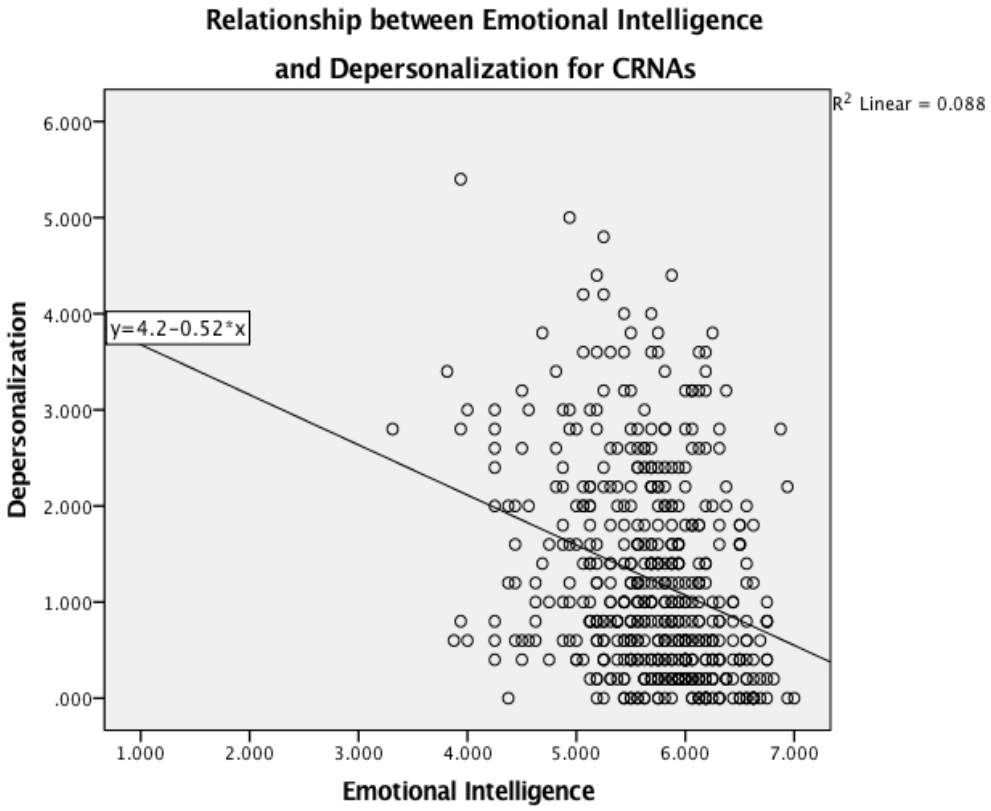

Figure 5. EI and depersonalization scatterplot

To further examine the relationship between EI and depersonalization a simple linear regression was used to see how EI, the independent variable, correlated with depersonalization, the dependent variable. The 95% confidence interval for the slope, -.669 to -.374 did not contain the value of zero, and therefore EI was significantly related to depersonalization (Table 14). The r^2 value for the linear regression was calculated to be .088 (Table 13), which indicated that 8.8% of the variability in depersonalization was accounted for by EI. Additionally, a regression equation of $DP = -.521 \times EI + 4.199$ (DP = depersonalization, EI = emotional intelligence) can be composed out of the values listed from the linear regression (Table 14). The t-test for total EI was significant with

significance set at $p < 0.05$ (t-statistic = -6.957, $p = .000$) with the dependent variable depersonalization. Due to the analysis results, the null hypothesis was rejected. Thus, the alternative hypothesis was accepted which concluded that a relationship existed between the level of EI and depersonalization for CRNAs.

Table 14

Linear Regression for EI and Depersonalization (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	4.199	.429	9.794	.000	3.357	5.042
Total EI	-.521	.075	-6.957	.000	-.669	-.374

a. Dependent Variable: Depersonalization

Depersonalization, the dependent variable, was then changed to a log-transformation so the coefficient could be more interpretable. Linear regression was then run with the dependent variable log-transformed. When the dependent variable, depersonalization, is log-transformed, the regression equation is: *ln (DP) = .881 -.101*EI* (DP = depersonalization, EI = emotional intelligence) (Table 15). Every unit of change in EI would result in a 10.1% change in depersonalization. This estimated coefficient of the log of depersonalization variable was $\beta_1 = -.101$; therefore, as the score of EI increased for one-unit, the model provided a reduction of depersonalization by 10.1%.

Table 15

Log-Linear Regression for EI and Depersonalization (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	.881	.079	11.181	.000	.726	1.036
Total EI	-.101	.014	-7.363	.000	-.128	-.074

a. *Dependent Variable: log of Depersonalization*

Relationship between Overall EI and Diminished Personal Accomplishment

To assess the relationship between EI and diminished personal accomplishment the third of the burnout dimensions, Pearson's correlation coefficient (*r*), was conducted. The Pearson coefficient was determined to be $r = .451$ (Table 16). A coefficient of $r = .50$ would be considered a high effect (Field, 2013). The results of this coefficient analysis concluded that there was a positive correlation between EI and diminished personal accomplishment.

Table 16

Model Summary for EI and Diminished Personal Accomplishment (N = 506)

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.451[a]	.203	.202	.677

a. Predictors: (Constant), Emotional Intelligence

A scatterplot (Figure 6) was constructed with EI (x-axis) and diminished personal accomplishment (y-axis) to demonstrate the linear relationship between EI and diminished personal accomplishment, which indicated that a positive correlation existed between higher EI scores and diminished personal accomplishment. To further examine

the relationship between EI and diminished personal accomplishment a simple linear regression was used to see how EI, the independent variable, correlated with diminished personal accomplishment, the dependent variable. The confidence interval, set at 95%, for the slope, -.664 to -.467 did not contain the value of zero, and therefore EI was significantly related to diminished personal accomplishment (Table 17). The r^2 value for the linear regression was calculated to be .20 (Table 16), which indicated that 20% of the variability in diminished personal accomplishment was accounted for by EI. Additionally, a regression equation of $DPA = -.566 \times EI + 4.218$ (DPA = diminished personal accomplishment, EI = emotional intelligence) could be composed out of the values listed from the linear regression (Table 17). The t-test total EI was significant with significance set at $p < 0.05$ (t-statistic = -11.253, $p = .000$) with diminished personal accomplishment. Due to the analysis results, the null hypothesis was rejected. Thus, the alternative hypothesis was accepted which concluded that a relationship existed between the level of EI and diminished personal accomplishment for CRNAs.

Table 17

Linear Regression for EI and Diminished Personal Accomplishment (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	4.218	.288	14.670	.000	3.653	4.783
Total EI	-.566	.050	-11.253	.000	-.664	-.467

a. Dependent Variable: Diminished Personal Accomplishment

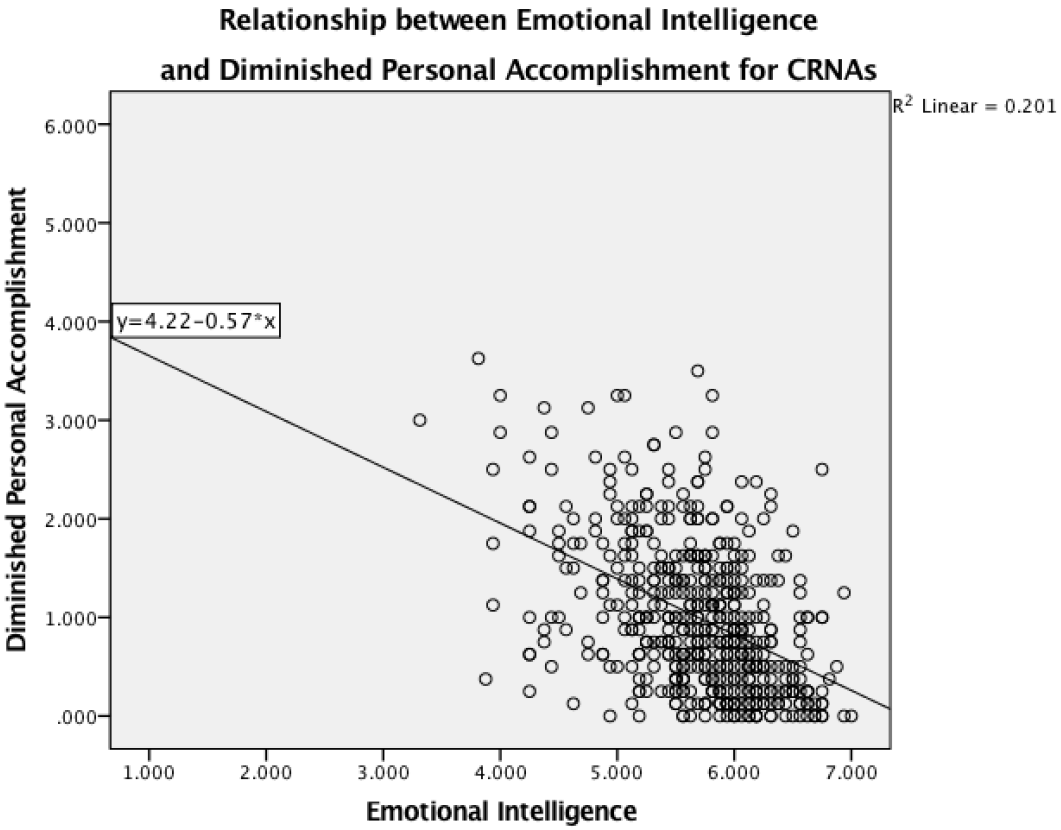

Figure 6. EI and diminished personal accomplishment scatterplot

Diminished personal accomplishment, one of the three dimensions of burnout syndrome was then changed to a log-transformation, so that the coefficient could be more interpretable. A linear regression was then run with the dependent variable log-transformed. When diminished personal accomplishment was log-transformed, the regression equation was: *ln (DPA) = .951 - .119*EI* (DPA = diminished personal accomplishment, EI = emotional intelligence) (Table 18). Every unit of change in EI resulted in an 11.9% change in diminished personal accomplishment. This estimated coefficient of the log of diminished personal accomplishment variable was $\beta_1 = -.119$;

therefore, as the score of EI increased for one-unit, the model provided a reduction of diminished personal accomplishment by 11.9%.

Table 18

Log-Linear Regression for EI and Diminished Personal Accomplishment (N = 506)

Model	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	*t*	Sig.	Lower Bound	Upper Bound
Constant	.951	.061	15.606	.000	.831	1.071
Total EI	-.119	.011	-11.215	.000	-.140	-.099

a. *Dependent Variable: log of Diminished Personal Accomplishment*

Summary

The relationship between EI and burnout syndrome had not been previously analyzed for CRNAs. CRNAs possess increased levels of EI, as evidence by a mean of 5.69 (SD = 0.60) for the total EI score and a median of 5.75. The mean score for burnout syndrome was 1.62 (SD = 0.88); however, it was highly suggested that the three scales be interpreted separately (Maslach et al., 2016). Evaluating the scales separately: the mean for emotional exhaustion was 2.38 (SD = 1.32), the mean for depersonalization was 1.23 (SD = 1.06), and the mean for diminished personal accomplishment was 1.00 (SD = 0.76).

The null hypothesis for RQ1 was rejected, and the alternative hypothesis was accepted, that a relationship existed between the level of EI and burnout syndrome for CRNAs. Furthermore, for an increased unit of change of EI, burnout syndrome was reduced by 20%. For RQ2, the null hypothesis was rejected, and the alternative hypothesis was accepted, that a relationship existed between burnout syndrome and the

four EI dimensions. While the alternative hypothesis was accepted, only two of the four EI dimensions (self-emotion appraisal and regulation of emotion) noted a significant relationship with burnout syndrome. Additionally, a one unit increase in self-emotion appraisal resulted in a 7.3% reduction in the burnout syndrome and a one unit increase in regulation of emotion resulted in a 6.6% reduction in the burnout syndrome. For RQ3, the null hypothesis was rejected, and the alternative hypothesis was accepted, which indicated that there was a relationship between the total EI score and each of the three burnout dimensions. In fact, for a one unit increase in EI, emotional exhaustion was reduced by 8.4%, depersonalization was reduced by 10.1%, and diminished personal accomplishment was reduced by 11.9%.

In this chapter, I presented the details regarding data collection to include recruitment, response rates, and time frame for the data collection. Baseline descriptive and demographic characteristics of the sample were discussed. Finally, a detailed statistical analysis was presented and organized according to the research questions, which included tables and figures to illustrate the results. Chapter 5 was a discussion of the results and implications for practice and future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This quantitative study evaluated the correlation between the level of EI and burnout syndrome among CRNAs. Also, this study assessed the relationship between the four EI dimensions (self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion) and burnout syndrome for CRNAs. Finally, this study evaluated the relationship between the overall level of EI and the three burnout syndrome domains (emotional exhaustion, depersonalization, and diminished personal accomplishment) for CRNAs. The research questions focused on the relationship between EI and burnout syndrome, the correlation between the four dimensions of EI and burnout syndrome, and finally, the link between EI and the three dimensions of burnout syndrome. Burnout has been linked to EI for other healthcare providers (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Vlachou et al., 2016; Weng et al., 2011). The relationship between EI and burnout syndrome appears to apply to CRNAs. Additionally, I noted an association between burnout syndrome and the four dimensions of EI. Finally, a correlation existed between EI and the three dimensions of burnout syndrome.

The four-dimensional framework as discussed by Davies et al. (1998) is an amalgam of EI theories which represent the four areas of EI. Each of the areas is a multidimensional construct of EI and aligns with the WLEIS. The four-dimensional framework of EI was the foundational underpinning for this study. EI is the ability to perceive one's own emotions, manage perceived emotions and regulate individual

actions, appraise the emotions of others, and use emotions to facilitate performance, build relationships, and communicate effectively. The components of EI can have an impact on burnout syndrome and researchers postulate that an inverse relationship exists between burnout syndrome and EI (see Birks et al., 2009; Görgens-Ekermans & Brand, 2012; Noh et al., 2016; Vlachou et al., 2016). Key findings of this study include that a relationship exists between EI and burnout syndrome for CRNAs. This chapter includes a summary of the analysis, interpretations of the findings, limitations of the findings, recommendations for future research, and implications for CRNAs.

The sample included 506 participants who met the enrollment criteria; the sample was adequate given the study methodology. The first sampling method was a closed professional Facebook group solicitation with a link to SurveyMonkey, which yielded a total of 222 completed surveys. The AANA facilitated email distribution, the second sampling method, where 3,000 random CRNAs received an email with a link to SurveyMonkey. There was a total of 284 completed surveys after two email notifications with this sampling method.

The first research question assessed the relationship between EI and burnout syndrome for CRNAs and was: What is the relationship between the level of EI and burnout syndrome for CRNAs? There was a positive correlation between EI and burnout syndrome for CRNAs with a Pearson coefficient analysis of $r = .387$. A simple linear regression model assessing the correlation between burnout syndrome and EI was statistically significant (significance set at $p < 0.05$). The r^2 value of .150 indicated that 15.0% of the variability in burnout syndrome is from EI. Due to the statistical

significance, I was able to reject the null hypothesis, and the alternative hypothesis was accepted that a relationship existed between the level of EI and burnout syndrome for CRNAs. A simple regression between EI, the independent variable, and a log transformation of burnout syndrome, the dependent variable, resulted in an estimated coefficient of the burnout syndrome variable of $\beta_1 = -.20$. As the score of EI is increased by one unit, the model provided a reduction of burnout syndrome by 20%.

The second research question assessed the relationship between the overall burnout score and the four dimensions of EI for CRNAs and was: What is the relationship between the overall burnout score and the four dimensions of EI for CRNAs? Use of a multiple linear regression model produced an r^2 value of .166. The results indicated that 16.6% of the variability in burnout syndrome is from the four dimensions of EI. The alternative hypothesis was accepted that a relationship exists between the overall burnout score and the four dimensions of EI for CRNAs. A significant relationship was noted for two of the EI dimensions (self-emotion appraisal and regulation of emotion) and burnout syndrome for CRNAs. A multiple linear regression model analyzed the relationship between a log transformation of burnout syndrome and the four EI dimensions. The estimated coefficient of the burnout syndrome variable to self-emotion appraisal was $\beta_1 = -.0.73$, others' emotion appraisal was $\beta_1 = - .008$, use of emotion was $\beta_1 = -.039$, and the regulation of emotion was $\beta_1 = -.066$. Every unit of change in self-emotion appraisal results in a 7.3% change in the burnout syndrome. Every unit of change in others' emotion appraisal results in a 0.8% change in the burnout syndrome. Every unit of change in the use of emotion results in a 3.9% change in the

burnout syndrome. Finally, every unit of change in the regulation of emotion results in a 6.6% change in the burnout syndrome. Self-emotion appraisal (7.3%) and regulation of emotion (6.6%) were statistically significant.

The third research question assessed the relationship between the overall level of EI and the three dimensions of burnout syndrome for CRNAs and was: What is the relationship between the overall level of EI and the three dimensions of burnout syndrome for CRNAs? A small correlation existed between EI and emotional exhaustion with a Pearson coefficient analysis of $r = .268$. A positive correlation existed between EI and depersonalization with a Pearson coefficient analysis of $r = .296$, and a strong correlation existed between EI and diminished personal accomplishment with a Pearson coefficient analysis of $r = .50$. A simple linear regression model was used to assess the correlation between EI and the three dimensions of burnout syndrome with .072 as the r^2 value, which indicates that 7.2% of the variability in emotional exhaustion is from EI. The r^2 value of 0.88 explains that 8.8% of the variability in depersonalization is from EI. The r^2 value of 0.20 indicates that 20% of the variability in diminished personal accomplishment is from EI. The alternative hypothesis was accepted that a relationship exists between the overall level of EI and the three dimensions of burnout syndrome for CRNAs. Simple linear regression was used to compare EI with the log transformations of the dependent variables: emotional exhaustion, depersonalization, and diminished personal accomplishment. As the score of EI increased by one unit, the model provided a reduction of emotional exhaustion by 8.4%, a reduction of depersonalization by 10.1%, and a reduction of diminished personal accomplishment by 11.9%.

Interpretation of the Findings

The CRNAs in this study had an average level of EI of 5.69, with observations ranging from 1.00 to 7.00. Seventy percent of the sample scored a 5.5 or higher on their total WLEIS, which indicated high EI. The WLEIS used by Weng et al. (2001) measured the mean level of EI for physicians at 5.43. The mean level of EI for APNs was measured at 5.0 (Noh et al., 2016). The MBI-HSS was also used with a mean burnout for physicians of 2.94 (Weng et al., 2011) and a mean burnout for APNs of 3.32 (Noh et al., 2016). The CRNA sample in this study had an average level of burnout syndrome of 1.62, which was less than previous research for APNs and physicians. A relationship exists between the level of EI and burnout syndrome for CRNAs. EI was found to be a significant variable reducing burnout among APNs in Korea (Noh et al., 2016), while physicians with a higher EI correlated with less burnout (Weng et al., 2011). This study allowed further interpretation of the relationship between EI and burnout syndrome and noted that as the score of EI increased by one-unit, the model provided a reduction of burnout syndrome by 20%. Other studies which used other EI instruments different than the WLEIS also noted an inverse relationship between EI and burnout syndrome (Cofer et al., 2018; Görgens-Ekermans & Brand, 2012; Lin et al., 2016; Nel et al., 2013; Vlachou et al., 2016).

The inverse relationship between EI and burnout was studied in a sample of 148 health professionals in Greece, and concluded that an individual's EI could influence, as well as predict, burnout (Vlachou et al., 2016). The second research question for this study focused explicitly on the burnout syndrome and the relationship between the four

dimensions of EI (self-emotion appraisal, others' emotion appraisal, regulation of emotion, and use of emotion) for CRNAs. The factors of EI in the Vlachou et al. (2016) study showed that the model explained 10.2% of the variability of burnout. Compared to the findings from this study, 16.6% of the variability of the burnout syndrome is from the four dimensions of EI. This study identified that two of the EI dimensions, self-emotion appraisal and regulation of emotion, were significantly related to burnout syndrome for CRNAs. Compared to the Vlachou et al. study where the factors of emotionality and self-control being were significantly related to burnout syndrome in health professionals working in rehabilitation.

Evaluating the relationship between the overall level of EI and the three dimensions of burnout syndrome, there was a small correlation between EI and emotional exhaustion, a medium correlation between EI and depersonalization, and a significant correlation between EI and diminished personal accomplishment. Natasha and Farcas (2015) did not find a significant correlation between the level of burnout and the level of EI for doctors and nurses; however, concluded that the development of EI could help reduce the tendency for the healthcare professional to perceive themselves as incompetent and unable to achieve goals. A significant inverse correlation was found between EI and emotional exhaustion and depersonalization for resident physicians (Lin et al., 2016). Compared to other studies, Cofer et al. (2018) noted an association between the three dimension of burnout syndrome and global EI. Also, Weng et al. (2011) noted a strong correlation between all of the dimensions of burnout and EI. This study noted that as the score of EI is increased by one-unit; a reduction in emotional exhaustion was 8.4%,

a reduction in depersonalization was 10.1%, and a reduction in diminished personal accomplishment was 11.9%. I was able to conclude that there is a correlation between EI and the three dimensions of burnout syndrome.

Theoretical Context

The four-dimensional definition of EI was the theoretical foundation of this study. The combination of the four dimensions of EI, (self-emotion appraisal, others' emotion appraisal, regulation of emotion, and use of emotion) represented the multidimensional construct of EI and aligned with the WLEIS. EI is the combination of identifying emotions in self and others, understanding emotions, and managing emotions. One of the four dimensions cannot stand alone to represent EI. Self-emotion appraisal has been considered the foundation of EI (Bradberry & Greaves, 2009; Goleman, 1995) and is the ability to understand emotions and express emotions naturally (Law et al., 2004). Regulation of emotion in self is the ability to know what to do with the knowledge from the self-emotion appraisal, primarily the action or lack of actions (Bradberry & Greaves, 2009; Goleman, 1995; Wong & Law, 2002). Others' emotion appraisal is the capability to be empathetic and understand the emotions felt by those around them (Bradberry & Greaves, 2009; Goleman, 1995; Wong & Law, 2002). Use of emotion is using emotion to facilitate performance and is the skill to build relationships and communicate effectively (Wong & Law, 2002). Use of emotion or managing relationship effectively is the culmination of the other three EI skills, self-emotion appraisal, regulation of emotion in self, and appraisal and recognition of emotions in others (Bradberry & Greaves, 2009; Goleman, 1995; Wong & Law, 2002). Emotional Intelligence can be visualized as a

pyramid with self-emotion appraisal as the foundation, regulation of emotion next, followed by others' emotion appraisal, and finally use of emotion to facilitate performance, which is the pinnacle of EI. Individuals who have higher EI should be happier in life and are less affected by his or her emotions (Law et al., 2004). The skill to recognize emotions and the ability to direct emotions in a positive direction tend to lead to greater life satisfaction (Law et al., 2004). Weng et al. (2011) postulated that individuals who could harness their emotions are more likely to be better at stress management and have less burnout. While there is no direct causation between EI and burnout syndrome in this study, Goleman (1994) touted that individuals who are in "flow" with their emotions and reaction to emotions are less likely to suffer from emotional exhaustion, a key component of burnout syndrome.

Limitations of the Findings

Survey research is an important means of data collection in the social sciences and has some distinct advantages such as low cost, participant anonymity, and a population from a wide geographical area can be surveyed (Fowler, 2014; Frankfort-Nachmias et al., 2015). Online survey sites similar to SurveyMonkey allow the participant to complete the survey in their free time, where they are comfortable. One of the limitations of this study was that participation was voluntary, and the results could be biased because of self-selection. Even though the instruments used have been previously validated, the WLEIS and the MBI-HSS are self-report measures and response biases could be a significant issue (Cofer et al., 2018; Ekermans & Brand, 2012, Weng et al., 2011).

Another limitation of this study was that only certain CRNAs agreed to participate and the study sample is not representative of the entire CRNA population; therefore, the generalizability of this study is limited. The sample of CRNAs in this sample was a convenience sample and was not representative of the CRNA population. Because of this limitation, a causal inference could not be drawn; therefore, the causal relationships were interpreted rather than established. This study was original research and a starting point for future research regarding CRNAs' EI and burnout syndrome.

Recommendations

This study may not be representative of the entire CRNA population; however, despite this limitation, there was some evidence that a relationship existed between high EI and low burnout for CRNAs. Replication of this study is needed, and recommendation would be to focus on a sampling strategy that would be more representative of the CRNA population. Previous research appreciated that less burnout was associated with higher job satisfaction among physicians (Weng et al., 2011). Perhaps including an additional variable like job satisfaction could assess the relationship between job satisfaction and burnout for CRNAs.

Goleman (2004) argued that emotional intelligence could be learned. If EI can be learned, then training experienced CRNAs, as well as SRNAs, could significantly benefit the nurse anesthesia profession. Further EI research is needed from an experimental standpoint with a pre-test assessment, intervention to teach EI, and a post-test assessment. The recommendation is for further longitudinal studies. Also, that EI training be

incorporated into the nurse anesthesia curriculum, which aligns with earlier research (Collins, 2013; Collins, Covrig, & Newman, 2014).

Implications

Burnout is a common problem that is well documented in many healthcare specialties, including physicians and nurses (Acker, 2011; Griner, 2013; Hyman et al., 2011; Van Der Colff & Rothmann, 2014). CRNAs were found to have high levels of stress in their personal and professional life, which resulted in a variety of symptoms including high blood pressure, headaches, and inability to concentrate (Chipas & McKenna, 2011). This study concluded that there was an inverse relationship between a CRNAs' high EI and low burnout. Despite the limitation that causal inferences could not be made and that the research cannot be generalized to the entire CRNA population, this research aligns with previous research that there is an inverse relationship between high EI and low burnout (Cofer et al., 2018; Görgens-Ekermans & Brand., 2012; Lin et al., 2016; Vlachou et al., 2016; Weng et al., 2011).

Furthermore, this study provides a foundation for the investigation of the relationship between EI and burnout syndrome for CRNAs. Previously, there was no examination of EI and burnout syndrome for CRNAs. Understanding the relationship between EI and burnout syndrome may lead to EI being viewed as a beneficial trait for CRNAs to acquire to help reduce burnout. Exhibiting greater leadership qualities, such as EI, while experiencing less burnout could increase job satisfaction, patient satisfaction, and improved interpersonal relationships with other healthcare providers (Studer, 2015).

Implications for CRNA Profession

The present study validated the previous research that there is an inverse relationship between high EI and low burnout among healthcare workers; however, provided new knowledge that was previously unknown regarding the relationship between EI and burnout syndrome for CRNAs (Cofer et al., 2018; Görgens-Ekermans & Brand., 2012; Lin et al., 2016; Vlachou et al., 2016; Weng et al., 2011). Also, there are practical implications for CRNAs, SRNAs, and educators. EI has been noted to be a successful leadership quality to possess in the Operating Room (OR) and having the ability to read the environment, especially the emotional environment of the OR personnel may allow for better identification and solution of issues and potential issues. EI encompasses many of the professional attributes of the CRNA: collaboration with other patient team members, situational awareness, professional engagement, cultural competence, utilization of evidence-based practice, ability to foster a teaching environment and finally act as a leader who can articulate direction (AANA, 2016b). Formal education, clinical experience, and professional attributes exemplify the foundation for a CRNA's professional growth, career engagement and personal satisfaction (AANA, 2016b). EI has been identified as a necessary aspect for physician anesthesiologists (Sieber & Burkhart, 2017) and should be considered an essential characteristic for CRNAs. EI skills can be learned (Goleman, 2004), and there are a variety of books and assessments that could increase the knowledge base. Furthermore, there are formal education programs that provide one-day to multi-day conferences focused exclusively on EI.

EI has been considered a competitive advantage in the healthcare arena (Kivland, 2013) and was recommended to be an admission criterion for CRNA programs (Collins, 2013). If not included as an admission criterion, then incorporating EI training in the CRNA curriculum could enhance student success (Collins et al., 2014). Also, offer training workshops specifically for practicing CRNAs who would like to increase their EI would be beneficial. The results of this study would be of importance to the AANA with an implication of change for both current and future CRNAs.

Implications for Healthcare Administration

EI can benefit not only CRNAs but also healthcare providers. The literature supports a correlation between EI and wellness, job satisfaction, patient satisfaction, decreased stress, and lower burnout (Cofer et al., 2018; Görgens-Ekermans & Brand., 2012; Kim & Lee, 2016; Nel et al., 2013; Noh et al., 2016; Por et al., 2012; Weng et al., 2011). Burnout syndrome which consists of emotional exhaustion, depersonalization and diminished personal accomplishment has been an area of concern because of the connection with patient safety and quality of care (Lyndon, 2016; Salyers et al., 2017; StuderGroup 2012). Specific to this study, burnout syndrome could be reduced by 20% with each increased unit of change in EI.

Furthermore, as EI increased by one-unit, an 8.4% reduction in emotional exhaustion occurred, a 10.2% reduction in depersonalization occurred, and an 11.9% reduction in diminished personal accomplishment occurred. Increasing EI while reducing burnout syndrome for healthcare professionals could be accomplished with educational programs. It should be noted there is much stigma that can be associated with burnout;

therefore, focusing education on improving EI rather than on reducing burnout, may be better perceived by healthcare providers (Cofer et al., 2018).

Bodenheimer and Sinsky (2014) discussed the Triple Aim goal which is to improve the health of the population by reducing costs, increasing quality and improving patient satisfaction. Physician and staff burnout are barriers to the effectiveness of the healthcare administrative framework of the Triple Aim and recommendation would be to address the addition of a fourth aim, which is care of the provider (Bodenheimer & Sinsky, 2014; Privitera, 2018). The idea is to focus on caring for the provider who cares for the patient, which would include the integration of a wellness program. Incorporating EI into the training program could increase the wellness of the healthcare staff and align with the goals of healthcare executives.

Conclusion

In this study, I evaluated the relationship between EI and burnout syndrome for CRNAs. I found that there was a positive correlation between EI and burnout syndrome for CRNAs. Specifically, that as the CRNA's EI score increased by one unit, there was a reduction in the burnout syndrome by 20%. Also, there was a relationship between the overall burnout score and the four dimensions of EI for CRNAs. For every unit of change in self emotion appraisal, the model resulted in a change of 7.3% in the burnout syndrome. Every unit of change in the regulation of emotion resulted in a 6.6% change in the burnout syndrome. Self-emotion appraisal and regulation of emotion were found to be more significant than others' emotion appraisal and use of emotion. A relationship existed between the level of EI and the three dimension of burnout syndrome. When the

score of EI increases for one-unit, the model provided a reduction of emotional exhaustion by 8.4%, a reduction of depersonalization by 10.1% and a reduction of diminished personal accomplishment by 11.9%. These results are consistent with previous research that many healthcare providers have high EI and low burnout (Cofer et al., 2018; Görgens-Ekermans & Brand., 2012; Kim & Lee, 2016; Nel et al., 2013; Noh et al., 2016; Por et al., 2012; Weng et al., 2011).

EI is a beneficial quality for many healthcare professions and is considered an advantage in the healthcare environment (Kivland, 2014). The relationship between EI and burnout syndrome for CRNAs can be beneficial in the field of nurse anesthesia with implications for CRNAs, SRNAs, and educators of CRNA programs. Including EI training in the nurse anesthesia curriculum and focusing EI training seminars specifically for practicing CRNAs could enhance the success of both SRNAs and CRNAs while reducing the incidence of burnout. Reducing burnout syndrome and improving EI could increase job satisfaction, patient satisfaction and improve interpersonal relationships with other healthcare providers. The findings of this study also suggest that healthcare executives and other healthcare leaders should focus on EI to reduce burnout within their organization. Utilization of this knowledge could provide more opportunity to focus on the care of the provider which aligns with the goals to provide safe, cost-effective, and high quality patient care.

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Appendix A: Survey Tool of CRNAs' EI and Burnout

CRNA's Emotional Intelligence and Burnout

Section 1 of 3 - Emotional Intelligence

The first section of this survey will evaluate your emotional intelligence. Please answer the following questions by choosing the appropriate choice that best fits.

* 1. I have a good sense of why I have certain feelings most of the time.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 2. I have good understanding of my own emotions.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 3. I really understand what I feel.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 4. I always know whether or not I am happy.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 5. I always know my friends' emotions from their behavior.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 6. I am a good observer of others' emotions.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 7. I am sensitive to the feelings and emotions of others.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 8. I have a good understanding of the emotions of people around me.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 9. I always set goals for myself and then try my best to achieve them.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 10. I always tell myself I am a competent person.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 11. I am a self-motivated person.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 12. I would always encourage myself to try my best.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 13. I am able to control my temper and handle difficulties rationally.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 14. I am quite capable of controlling my own emotions.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 15. I can always calm down quickly when I am very angry.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

* 16. I have good control of my own emotions.

Totally Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Totally Agree
○	○	○	○	○	○	○

CRNA's Emotional Intelligence and Burnout

Section 2 of 3 - Burnout Inventory

The purpose of the next part of the survey is to discover how various persons in the human services or helping professions view their job and the people with whom they work closely.
Instructions: On the following pages are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have *never* had this feeling, choose the number "0" (zero) in the space after the statement. If you have had this feeling, indicate *how often* you feel that way (from 1 to 6).

* 1. I feel emotional drained from my work.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 2. I feel used up at the end of the workday.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 3. I feel fatigued when I get up in the morning and have to face another day on the job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 4. I can easily understand how my patients feel about things.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 5. I feel I treat some patients as if they were impersonal objects.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 6. Working with people all day is really a strain for me.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 7. I deal very effectively with the problems of my patients.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 8. I feel burnout out from my work.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 9. I feel I'm positively influencing other people's lives through my work.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 10. I've become more callous toward people since I took this job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 11. I worry that this job is hardening me emotionally.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 12. I feel very energetic.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 13. I feel frustrated by my job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 14. I fell I'm working too hard on my job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 15. I don't really care what happens to some patients.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 16. Working with people directly puts too much stress on me.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 17. I can easily create a relaxed atmosphere with my patients.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 18. I feel exhilarated after working closely with my patients.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 19. I have accomplished many worthwhile things in this job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
○	○	○	○	○	○	○

* 20. I feel like I'm at the end of my rope.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
◯	◯	◯	◯	◯	◯	◯

* 21. In my work, I deal with emotional problems very calmly.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
◯	◯	◯	◯	◯	◯	◯

* 22. I feel patients blame me for some of their problems.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday
◯	◯	◯	◯	◯	◯	◯

CRNA's Emotional Intelligence and Burnout

Section 3 of 3 - Demographic Information

This section of the survey will collect demographic information. Please answer the following questions by choosing the appropriate choice.

* 1. Age

◯ 20-29 ◯ 30-39 ◯ 40-49 ◯ 50-59 ◯ 60 & above

* 2. Gender

◯ Male ◯ Female

* 3. Ethnicity

◯ White
◯ African American
◯ Hispanic
◯ American Indian
◯ Asian
◯ Other

* 4. Family Status

◯ Single ◯ Married ◯ Divorced ◯ Widow ◯ Live together

* 5. Highest Educational Level

◯ Bachelor's Degree ◯ Master's Degree ◯ Doctoral Degree

* 6. Years of CRNA Experience

◯ 0-4
◯ 5-9
◯ 10-14
◯ 15-19
◯ 20-24
◯ 25-29
◯ 30-34
◯ 35-39
◯ 40+

7. AANA Membership Number

Thank you for your participation!

Dianna M. Heikkila, CRNA, MSN
diannaheikkilacrna@gmail.com

Appendix B: Email Invitation to Participate in Study

Hello fellow CRNA colleagues,

My name is Dianna Heikkila and I am a CRNA and PhD candidate working on my dissertation. I have been a clinical CRNA for the last 16 years and am passionate about our profession and advancing the research of CRNAs as leaders in healthcare.

The following survey is intended to measure your Emotional Intelligence (EI) and the level of burnout. I am conducting this study to determine if a relationship exists between a CRNAs EI and burnout. Healthcare providers who exhibit greater leadership qualities such as EI tend to experience less burnout and could potentially increase job satisfaction, patient satisfaction, and interpersonal relationship with other healthcare providers.

The survey consists of three parts and took approximately 1-15 minutes of your time. This is a one-time survey and there will be no other required participation after the conclusion of the survey. Please note that your participation is entirely voluntary, and you can exit the survey at any time.

The information will remain confidential and your identity will remain anonymous. The only identifier will be your AANA membership number; however, your AANA number will not be linked to your identity at any time.

Please click the link below to start the survey.

https://www.surveymonkey.com/r/J6RB5XM

Thank you for your participation!

Dianna Heikkila, CRNA, MSN

Appendix C: Permission to Use WLEIS Assessment

PsycTESTS®

Wong and Law Emotional Intelligence Scale
Version Attached: Full Test

PsycTESTS Citation:
Wong, C.-S., & Law, K. S. (2002). Wong and Law Emotional Intelligence Scale [Database record]. Retrieved from PsycTESTS. doi: http://dx.doi.org/10.1037/t07398-000

Instrument Type:
Rating Scale

Test Format:
Items are rated on a 7-point Likert-type scale ranging from strongly agree to strongly disagree.

Source:
Supplied by author.

Original Publication:
Wong, Chi-Sum, & Law, Kenneth S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. The Leadership Quarterly, Vol 13(3), 243-274. doi: 10.1016/S1048-9843(02)00099-1

Permissions:

Appendix D: Permission to Use MBI-HSS Assessment

Maslach Burnout Inventory™

Instruments and Scoring Keys

Includes MBI Forms:

Human Services - MBI-HSS
Medical Personnel - MBI-HSS (MP)
Educators - MBI-ES
General - MBI-GS
Students - MBI-GS (S)

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Published by Mind Garden, Inc.

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