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Emotional intelligence and empathy of nursing students in an immersive capstone clinical course

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EMOTIONAL INTELLIGENCE AND EMPATHY OF NURSING STUDENTS IN AN IMMERSIVE CAPSTONE CLINICAL COURSE

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This dissertation, written by Michelle Finch under direction of her Dissertation Committee, and approved by all of its members, has been presented and accepted in partial fulfillment of requirements for the degree of

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Abstract

Background. Today's baccalaureate nursing students need to be prepared to care for patients in an ever-changing, high acuity environment. Many programs offer a capstone immersive clinical experience. However, the benefits of this experience have not been fully explored, and the effect on patient care is unknown.

Purpose. The purpose of the study was to determine if there was a change in levels of Emotional Intelligence (EI) and empathy in senior students who completed a capstone immersive clinical experience in the final semester of a baccalaureate nursing program.

Theoretical Framework. The theoretical framework for this study was the Mayer and Salovey's (1997) four-branch model of EI which evaluated EI and empathy of the senior nursing student.

Methods. This quasi-experimental study was conducted at a baccalaureate degree program in the Mid-South. A convenience sample was utilized to examine the means of EI and empathy before and after a capstone immersive clinical experience.

Results. Significance was found in students' EI levels after the immersive experience. No significance was found in students' empathy levels. Significance was not found in students' EI or empathy with regards to gender and prior health care experience. In students with prior health care experience, empathy declined with increased exposure to clinical experience.

Conclusions. EI and empathy along with caring and compassion need to be recognized as important concepts in nursing education. Implementation of EI and

empathy in educational activities and evaluation of their effectiveness in nursing curricula will improve students' preparedness as they complete their education and enter practice.

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Chapter One

The Problem and Domain of Inquiry

The Institute of Medicine (2010) concluded nursing education needs to prepare students for competent and safe practice in a 21st century health care environment. Nursing education must evaluate current nursing students' abilities to effectively use emotional and social intelligences in managing patient care (Moyer & Wittmann-Price, 2008). Health care is undergoing historic change due to the Affordable Health Care Act (ACA) of 2010, advances in technology, and the aging population. Students need to have the proper tools including clinical reasoning, critical thinking, and emotional and social maturity as well as technical skills to manage the complexities of contemporary professional nursing. To accomplish this, nursing education must be prepared to meet these challenges.

Historically, nursing students were more intuitive with what nursing termed the *soft skills of science* or the art of nursing which includes the attributes of caring, compassion, and empathy in providing holistic care, so curricula focused more on the *hard skills* or science of nursing (Bellack, 1999). Codier, Freitas, and Muneno (2013) have summarized nursing effectiveness in providing competent care that depends on using interpersonal skills, team-based problem solving, and nursing intuition. This is referred to as the art or soft science of nursing. Today the attributes of caring, compassion, and empathy which reside in the affective learning domain are less intuitive especially among today's nursing students and need to be taught in nursing curricula

(Beauvais, Brady, O'Shea, & Griffin, 2011; Bellack, 1999; Codier et al., 2013). This is due to the societal changes with the emergence of computers and technology rendering instant access to information via handheld electronic devices and social media (Codier et al., 2013). Academic nurse educators need to include the development of skills in emotional and social intelligence and thread them throughout the baccalaureate education curricula in discussions related to interpersonal therapeutic communication between the patient and nurse. Incorporation of affective learning in nursing education will allow students to be more caring, compassionate, and empathetic in their practice.

Emotional Intelligence (EI)–the ability to perceive, to use emotion to facilitate thought, to understand emotion, and to manage emotion (Mayer, Salovey, & Caruso, 2004)–is an integral piece of the art or soft science in nursing. Nursing students need to develop competencies in the art of nursing to be successful in providing safe and competent care to the communities in which they serve. EI and empathy–accurately perceiving the feeling and emotions of others (Rogers, 1959)–are key traits which nursing students and practicing nurses must possess to provide professional nursing care (Baillie, 1996; Freshwater & Stickley, 2004; Wheeler & Barrett, 1994; Williams, 1992). EI is an understanding of how emotion and thought work together to be able to effectively communicate with others including patients. Empathy is an affective trait or characteristic which can be utilized in realizing the appraisal and expression of emotion in others. As the acuity of hospitalized patients continues to increase along with patient numbers, the nurse's ability to manage the hard science or technical competency and the soft science of EI or caring and empathy becomes a delicate balancing act. Nurses function as part of an interdisciplinary team and EI can assist them in positively contributing to the care of the

patient as well as creating a positive work environment.

In the last decade, nursing education has seen a dramatic change in the types of students being admitted into their programs. These changes which are both educational and generational in origin have contributed to students' attributes which show a lack of critical thinking ability and decreased emotional maturity. This leads to students' problems with critical thinking and clinical reasoning ability during the program of study which may be attributed to multiple factors including lack of preparation in secondary school to changes in societal norms. Those who fail to develop or improve these skills during nursing school also fail in passing the licensure exam. Students who struggle with critical thinking also struggle with clinical reasoning skills (Freshwater & Stickley, 2004; Idczak, 2007; Montes-Berges & Augusto, 2007). Nursing students must learn how to understand the patient's condition and be able to make the right decision for the right reason (Pitt, Powis, Levett-Jones, & Hunter, 2015) In addition, nursing students of today also lack abilities in effectively communicating and emotionally connecting to others including their patients (Freshwater & Stickley, 2004; Idczak, 2007). Developing nursing curricula to address students' development of critical thinking, clinical reasoning, and EI in nursing programs will meet the current needs of today's nursing student.

Idczak (2007) reported nursing students experience fear and anxiety when interacting with patients in the clinical setting. This lack of connecting with patients on an emotional level creates an inability to empathize with patients which can lead to unsafe practice and negative outcomes (Doherty, 2009). Nursing students who lack EI and empathy struggle with the stresses that come with juggling the high demands of nursing school and their personal lives and are at risk in being unsuccessful as licensed

registered nurses (Montes-Berges & Augusto, 2007). Being able to develop and use EI and empathy in successfully completing the nursing program and becoming a registered nurse will serve the individual and the community in contributing to the nursing profession.

Gender is also an issue in developing competency in EI and empathy among nursing students. Women in nursing have higher levels of EI and empathy than their male counterparts (Carrothers, Gregory, & Gallagher, 2000; Ciarrochi, Chan, & Caputi, 2000; Mayer, Caruso, & Salovey, 1999; Mayer, Salovey, & Caruso, 2002; Palmer, Gignac, Manocha, & Stough, 2005; Van Rooy, Alonso, & Viswesvaran, 2005). This may be due to the female gender who tend to be more empathic and have better developed interpersonal communication skills (Van Rooy et al., 2005). Nursing continues to be a female dominated profession but males have begun to choose nursing as a career. In 2011, 9.6% of all nurses were men and 90% were women (U.S. Census Bureau, 2013).

Once students successfully complete a Baccalaureate of Science in Nursing (BSN) program and pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN), they must be equipped with competencies to provide basic safe, competent, professional nursing care. Included among those competencies are technical skills or the science of nursing, and soft skills or the art of nursing. The soft science in the affective domain is EI–the ability to perceive, to use emotion to facilitate thought, to understand emotion, and to manage emotion (Mayer et al., 2004), and empathy–accurately perceiving the feeling and emotions of others (Rogers, 1959).

Emotional Intelligence

It has been established that emotions and intelligences are complex cognitive processes. Psychologists have studied intelligence and emotion as independent entities for centuries, but it was not until the 1980s that the notion that they could be connected was postulated. EI is a concept that originated through extensive research and theory development about thoughts, feelings, and abilities that were considered unrelated phenomena until 1990. Psychologists Mayer and Salovey hypothesized that EI was a standard intelligence (Akerjordet & Severinsson, 2007). EI has been most recently defined by Brackett and Mayer (2003) as

> The ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (p. 35)

Conceptualization of Emotional Intelligence

EI has been conceptualized into three processes as follows: (a) appraisal and expression of emotion in self and others, (b) regulation of emotion in self and others, and (c) utilization and use of emotion in adaptive ways (Salovey & Mayer, 1990). Appraisal of expression of emotion in self refers to emotional expression through verbal and non-verbal communication. In others, appraisal of expression of emotion refers to nonverbal perception and empathy (Salovey & Mayer, 1990). Regulation of emotion in self refers to a person's mood; in others, it includes the ability to regulate and alter their affective reactions (Salovey & Mayer, 1990). Utilization of emotion in adaptive ways in one's self

includes flexible planning, creative thinking, redirected attention, and motivation (Salovey & Mayer, 1990).

Once defined and conceptualized, EI was empirically studied to demonstrate the combination of emotion and cognition in identifying complex social situations (Mayer, DiPaolo, & Salovey, 1990). EI emerged into the mainstream with Goleman's 1995 work *Emotional Intelligence: Why It Can Matter More Than Intelligence Quotient (IQ)*. As a result of Goleman's discussions regarding EI, it is replacing IQ as a measure of intelligence especially in the workplace and those in leadership positions (Goleman, 1995).

Intelligences have been studied and defined from ancient times beginning with Descartes's notion in 300 A.D. that intelligent ability is to discern truth from fiction. In Baldwin's encyclopedic *Dictionary of Philosophy and Psychology* published in 1902 defined intelligence as "the faculty or capacity of knowing" (p. 199). The definition of intelligence most often cited from Wechsler (1958) states, "intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (p. 7). Thorndike was the first to offer intelligence as quantitative categories which later were classified into three main categories including (a) abstract or verbal intelligence, involving the ability to use symbols; (b) practical intelligence, involving the ability to manipulate objects; and (c) practical intelligence, involving the ability to interact with human beings. This was significant as it emphasized what a person can do and how he can do it (Wechsler, 1958).

The concept of emotion is equally complex and difficult to define and to conceptualize. Emotion has been historically defined by philosopher Spinoza as a set of

beliefs and desires which effect awareness of somatic reactions (Matthews, Zeidner, & Roberts, 2002). Useful distinctions can be made between emotions, feelings, moods, and affect (Fox, 2013). A contemporary definition from Fox (2013) is "emotions are often considered to be discrete and consistent responses to an internal or external event which has a particular significance for the organism" (p. 16). Feelings last for a short period of time and consist of particular responses to an event significant to the individual (Fox, 2013). A standard intelligence has been developed from emotional and cognitive processes of emotions, combined, and deemed EI.

EI is an emerging concept in teaching with the affective domain in nursing education. The affective domain refers to attitudes, beliefs, values, feelings, and emotions used in teaching-learning (Billings & Halstead, 2011). Instructing students on how to use attitudes, feelings, and emotions in developing therapeutic nurse-patient relationships assists in development of student EI. Bellack (1999) has concluded that EI is the missing ingredient in nursing education. Multiple studies in BSN curricula have been conducted with conclusions that the ability to perceive, to use emotion to facilitate thought, to understand emotion, and to manage emotion (Mayer et al., 2004) is very important in graduating students who will be successful as they transition into practice (Bellack et al., 2001; Benson, Martin, Ploeg, & Wessel, 2012; Shanta & Connolly, 2013). Schools in Texas and Canada have developed curricula that incorporate EI in hopes to develop and increase students' levels of EI as they care for patients and transition into practice. For example, one study looked at EI among the four levels of students in nursing school. Results were significant that EI increases as the student progresses in their education (Benson et al., 2012). While nursing programs are beginning to understand the need to

address the soft science of emotions, social interaction, and interpersonal relationships which includes EI, more research is needed on how to successfully accomplish this. One way to increase nursing soft science or EI and empathy is to use experiential learning in an immersive clinical experience in the final semester of BSN programs to evaluate levels of EI just prior to graduation.

Emotional Intelligence in Health Professions Curricula

Allied health. Multiple studies have been conducted to evaluate the need for EI and empathy in the area of allied health, specifically occcupational therapy (OT) and physical therapy (PT). Students who had instruction in EI and empathy performed better in the clinical area and were more successful on the licensure examinations. Studies in the allied health area support including EI in their respective programs of study (Andonian, 2013; Larin et al., 2011; Lewis, 2010; Lewis, 2011)

Medicine. Medical schools have acknowledged the need for students to learn how to interact with patients on an emotional level and improve their *bedside manner*. Multiple schools have studied medical students' current levels of EI and empathy and have deduced that there is a need for a more holistic approach including emotional and empathetic care (Austin, Evans, Magnus, & O'Hanlon, 2007; Cherry, Fletcher, O'Sullivan, & Dornan, 2014; Fletcher, Leadbetter, Curran, & O'Sullivan, 2009; Imran, Aftab, Haider, & Farhat, 2013; Libbrecht, Lievens, Carette, & Côté, 2014; Stoller, Taylor, & Farver, 2013; Weng, 2008). Imran et al.'s (2013) study concluded the need to incorporate EI in the curriculum to improve competency in patient-centered care and effective communication skills.

Nursing. Traditional nursing curricula have concentrated on learning facts and skill competencies with little emphasis on active learning and developing leadership skills. Nursing students receive little to no instruction in learning how to cope with the emotional aspects of nursing, and with no attention to building EI to manage the multiple demands of the professional nurse (Horton-Deutsch & Sherwood, 2008). Nursing researchers studying EI concluded schools of nursing need to include experiential and active learning opportunities that build EI skills and competencies in their curricula and not just include the term in the curricular rhetoric (Freshwater & Stickley, 2004). These authors cautioned the implementation of EI in the curricula without fully understanding its purpose and the need to include EI in the same concentration as the skills and knowledge of nursing. There is strong support in the literature that EI needs to be a major concept within nursing curricula (Smith, Profetto-McGrath, & Cummings, 2009).

Three major themes of EI emerged that need to be included to prepare students for nursing practice as follows: (a) The need to understand the emotional nature of nursing to be prepared for practice; (b) the need of emotional skills to deliver competent nursing care; and (c) the need for EI competencies to effectively deal with chaotic working environments (Smith et al., 2009). Themes one and two will be explored in this research study; however, chaotic working environments will not be explored. Horton-Deutsch and Sherwood (2008) suggest using reflectivity to promote the development of self-awareness, and using relation and communication skills in developing EI competencies. All components of EI need to be threaded throughout the curriculum and given as much importance as acquiring skills competencies (Freshwater & Stickley, 2004). Emotional skills needed by graduates are rooted within nursing concepts and include notions of

caring, empathy, and understanding, and in dealing with conflict in nurse-patient relationships in practice (Cox, 2002; Faugier & Woolnough, 2002; Hambleton, 2006). Well-developed EI and self-confidence is reasoned to be an essential skill for future competent practice and integration into the workforce (Bellack, 1999; Kerfoot, 1996; MacCulloch, 1999). Dealing with the realities and complexities of practice might be buffered by emotionally competent graduates who can handle stress in the workplace (Evans & Allen, 2002; Gooch, 2006; Smith et al., 2009). There are no studies to date related to increasing EI and empathy through explicit instruction.

Empathy

Empathy has been defined in many ways depending on the context. The *Merriam-Webster's Online Dictionary*, 11th edition defines empathy as "the feeling that you understand and share another person's experiences and emotions" (Empathy, n.d.). Boyd (2008) defines empathy as "the ability to experience, in the present, a situation as another did at some time in the past" (p. 143). In health care, Rogers (1959) definition is "the ability of health care professionals to accurately understand patients, emotionally and mentally, as though they were in the patient's shoes, but without losing their status" (p. 6). Empathy which is also a subcategory of EI can be learned according to psychologists (Salovey & Mayer, 1990).

Empathy is a complex interpersonal characteristic that is difficult to study and evaluate (Davies, 2014). When quantifying empathy we turn to Morse et al. (1992) who define the four component model of empathy. This model of empathy includes moral empathy, cognitive empathy, behavioral empathy, and emotive empathy. Moral empathy is expressed when a person encounters pain or suffering of another (Morse et al., 1992).

Cognitive empathy is sensing and understanding the patient's emotional state (Davies, 2014). Behavioral empathy is evoked when the nurse seeks to demonstrate understanding of the patient's situation (Davies, 2014). Emotive empathy is the affective component of empathy wherein the nurse has an emotional reaction to the patient's situation (Davies, 2014).

Practicing nurses as well as novice nurses lack many aspects of compassion and caring including empathy or the soft science of nursing (Ward, Cody, Schaal, & Hojat, 2012). Van der Cingel (2014) describes the state of compassion in nursing by saying "compassion as a concept is not easily found in nursing curricula or in the body of knowledge on which nursing curricula and practice are based" (p. 1,253). This is a result of the multiple changes that have occurred in health care over the past decade including most recently the implementation of the ACA which has forced nurses to have increased patient loads and practice in a more managerial role in documenting skills performed. They have not spent quality time at the bedside caring for the patient holistically.

Studies show that nurses who are empathetic in caring for patients have an increase in patients' satisfaction as well as a decrease in stress (Ward et al., 2012). Nurses' EI qualities of self-awareness, self-regulation, social skill, and empathy aid in the identification of processes that improve outcomes for patients (Adams & Iseler, 2014). This confirms the need for students to understand the concepts of being compassionate, caring, and empathetic and the impact is has on the welfare of their patients. When implementing the capstone clinical course these concepts need about compassion, caring, and empathy need to be emphasized so students can learn how important they are in their practice.

Immersive Learning Experience to Evaluate Students EI and Empathy

As a result of the revised 2008 American Association of Colleges of Nursing ([AACN], 2008) *Essentials of Baccalaureate Education for Professional Nursing Practice*, BSN schools have revised their curricula to include a capstone course to better transition students to beginning practice and to expose them to an area of practice in which they may find interest. Idczak (2007) concluded clinical experiences provide valuable opportunities to learn the art as well as the science of nursing. Including an immersive capstone experience in the last semester of a BSN nursing program adds to students' experiential opportunity to learn the art of nursing. Rebeschi and Aronson (2009) presented research concluding that the capstone experience in the final semester of a BSN program does not necessarily change the success on the NCLEX-RN exam but it does increase the integration, autonomy, confidence, authority, and advocacy consistent with a perceived enhanced competence in the nursing role. The students also seek employment in the area in which they completed their capstone experience (Rebeschi & Aronson, 2009). This is in fact the impetus for implementing the capstone course within BSN nursing programs.

Capstone clinical courses in BSN programs vary in their components across the country. Courses begin with 90 hours of precepted clinical to as many as 180 hours or more depending on the program. It could then be concluded that the more times spent in immersive learning the better prepared the student will be in transitioning into practice.

Concepts of using interpersonal skills, team base problem solving, and nursing intuition is referred to as the soft science of nursing (Codier et al., 2013). EI as a teaching framework can be learned. Learning at an emotional and social level requires a new

perspective on learning. Learning how to think about and use emotional information has not been explicitly implemented in nursing education. One of the best ways to learn EI is through experiential learning (Molter, 2003). Learning from experience reflects how nursing students gain knowledge from clinical experiences. In the capstone clinical course students are immersed in learning from experience. Kolb's (1984) experiential learning model requires four different kinds of abilities (a) concrete experience (an openness and willingness to learn from new experiences); (b) reflective observation (observation and reflective skills so new experiences can be viewed from many perspectives); (c) abstract conceptualization (using observations to critically analyze ideas and concepts), and (d) active experimentation (using decision-making and problem-solving skills to use new ideas and concepts that can be used in real practice situations; Kolb, 1984; Figure 2).

Nursing education must meet the needs of today's students in order for them to be successful in their programs as well as in their careers. For decades, the theory to practice gap has existed and it remains today (Benner, Sutphen, Leonard, & Day, 2010; Duchscher, 2009; Freshwater & Stickley, 2004). Nurse educators as well as hospital administrators acknowledge the persistent gap even with education's best efforts to address the problem (Benner et al., 2010; Duchscher, 2009; Freshwater & Stickley, 2004). Reemts's (2015) study compared nurses with one to two years of experience and three to four years of experience resulting in no significant increase in EI and concluded that more instruction on developing EI skills needs to be taught in nursing education programs. In addition to instructing students in current evidence based practices (Hanberg & Brown, 2006) and to produce BSN prepared nurse generalists, nursing education needs

to create an environment in which students are given time to practice nursing like nurses experience in actual practice. The experiences nursing students need to have should include practicing nursing technical skills as well as affective skills like caring, empathy, and EI.

To accomplish this challenge, a mid-south, public university's school of nursing revised their curriculum to provide this opportunity in a course entitled Capstone Clinical which is required in the last semester of the program. The course provides 150 clinical hours where each student is paired with a qualified nurse preceptor in the community for an experiential learning opportunity in an immersive patient care training program. It was hypothesized that experiencing 150 hours of direct supervised immersive clinical education will increase students' levels of EI and empathy. A change in EI and empathy will occur at the conclusion of the direct care of patients with emphasis on using effective interpersonal skills, team-based problem solving skills as shown by scores on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) posttest. By providing this immersion experience, the student will fully understand the realities of the professional nurse; this includes the holistic management of patient care in a technical and emotional manner. When observing nurses and health care professionals use empathy and EI in caring for patients, students can begin to see how soft science, caring for human beings, is realized. This will then allow them to transition from the role of student to nurse more seamlessly.

BSN programs are continuing to revise their curricula to include a capstone clinical course. Rebeschi and Aronson (2009) has described findings of the capstone practicum to evaluate program learning outcomes as well as student learning outcomes.

The mixed methods study showed significance in student's grade point average (GPA) post capstone experience from the quantitative part of the study, and five themes emerged from the qualitative portion including integration, autonomy, confidence, authority, and advocacy (Rebeschi & Aronson, 2009). The study did not include evaluation of EI or empathy. In a continuing effort to best prepare students to transition into practice more studies are required to evaluate capstone clinical effectiveness. Immersive experiences in the student's chosen field will assist in increasing in gaining the hard and soft science of nursing. To that end, the focus of study of evaluating EI and empathy levels in students at the conclusion of the capstone clinical will be the undertaking of study here.

Problem Statement

The literature supports the notion that experiential learning with increased exposure to nursing practice has been established through direct supervised clinical experience. Assessing the extent to which a capstone immersive clinical experience adequately prepares the student for professional practice has yet to be established through empirical research. In addition, the comparison of students' levels of EI and empathy before and at the completion of a capstone clinical course as an experiential learning opportunity has not been studied. Thus the need to compare students' change in EI and empathy, through experiential learning in an immersive capstone clinical is evidenced by gaps in the literature.

Purpose of the Study

The purpose of this study was to determine if there was a change in levels of EI and empathy in senior students who completed a capstone immersive clinical practice experience in the final semester of a BSN program.

Research Questions and Hypotheses

Research Question and Hypothesis 1

Research question. Is there a difference between scores in Emotional Intelligence and empathy among senior generic BSN nursing students before and after completing a capstone clinical course?

Research hypothesis. There is a difference between scores in Emotional Intelligence and empathy among senior generic BSN nursing students before and after completing a capstone clinical practice experience in the final semester of a baccalaureate nursing program.

Research Question and Hypothesis 2

Research question. Is there a difference in levels of emotional intelligence and empathy between males and females among senior generic BSN nursing students who experienced a capstone clinical?

Research hypothesis. There is a difference in scores of emotional intelligence, empathy related to gender among senior generic BSN nursing students who experienced a capstone clinical.

Research Question and Hypothesis 3

Research question. Is there a difference in scores of emotional intelligence and empathy levels among generic BSN students with prior health care experience (HCE) who complete a capstone clinical?

Research hypothesis. There is a difference in scores of emotional intelligence and empathy among generic BSN students with prior HCE who complete a capstone clinical.

Significance of Study

Nursing Education

The theory to practice gap continues to be an issue for nursing education (Benner et al., 2010; Duchscher, 2009; Freshwater & Stickley, 2004). BSN programs are adding an integrated practicum or clinical capstone course which provide the benefits of (a) improved preparation of nursing graduates as they transition into practice, (b) exposure to nursing practice responsibilities that exist in the complexity of skills needed to provide safe patient care, (c) providing time and opportunity for students to meet expectations as they transition into practice, and (d) increase the level of nurses who are educationally prepared and clinically competent to begin their career (Spurr, 2007). It is important to evaluate the comparison in levels of EI and empathy among the participants. Nursing education needs more tools in evaluating the success of the students in the course specifically and the program in whole. The capstone clinical course will give educators valuable data in evaluating student success in the current curriculum and where improvements can be implemented. These concepts have yet to be studied which will add to the limited body of knowledge related to EI and empathy in nursing education.

Nursing Practice

Providing students with a capstone immersive clinical course is intended to better prepare students as they begin their career as nurses. The majority of novice nurses, most of whom are also in the millennial generation, begin practice in an acute care setting (Olson, 2009). For this reason students are placed in hospital setting. Studying how EI and empathy correlate to nursing students' experiences in a capstone clinical course will

assist the researcher in gaining understanding of the importance of direct patient interaction on these concepts.

Emotions and empathy as demonstrated in EI (Mayer et al., 1999) play a significant role in nurses' ability to successfully provide safe competent care (Rochester, Kilstoff, & Scott, 2005; Schutte et al., 2001). Developing and maintaining interpersonal and social relationships with patients and colleagues makes for a positive working environment (Schutte et al., 2001) as well as decreasing stress. The presence of stressful work environments in nursing lead to threats in patient safety (Institute of Medicine, 2003). Nurses with high levels of EI can effectively manage their stressful environment, and possess high performance levels and career longevity (Budnik, 2003; Codier, Kooker, & Shoultz, 2008; Codier, Kamikawa, Kooker, & Shoultz, 2009).

Nursing Research

EI has emerged as a construct to explain life and career successes so research has ensued in many disciplines including medicine and nursing. The study of EI in nursing is in its infancy particularly in nursing education. In nursing there is little empirical data to show which nursing competencies are most important in producing nurse graduates to effectively and safety care for their patients. This study will add valuable knowledge of correlating EI and empathy in the capstone clinical experience of senior nursing students. Studying EI and empathy as students complete the Capstone Clinical course will attempt to show a difference between capstone immersive clinical experience and EI and empathy.

Public Policy

The Institute of Medicine's (2010) report brief *The Future of Nursing: Focus on Education* recommended nursing education revise their programs to provide improved transition to practice. This was in attempt to bridge the theory-to-practice gap that continues to present as novice nurses enter into practice (Benner et al., 2010; Duchscher, 2009; Freshwater & Stickley, 2004). The report also addressed the need to increase educational preparedness in areas outside critical care where patients need increasingly complex care (Institute of Medicine, 2010). Students are currently educated to meet the need in the acute care setting but are deficient in other areas of the health care in the community settings including long-term care facilities, home care, chronic illness management, care of older adults, and transitional care (Institute of Medicine, 2010). With improving student preparedness through the capstone clinical course, nursing students will have improved EI and empathy in providing the technical as well as the interpersonal skills needed to make their transition a successful one. Sites for the capstone clinical may be in acute care or community care so students can be exposed to all areas of nursing. As public policy evolves with the implementation of the ACA, nursing must provide educational opportunities to meet the needs of the communities in which they serve.

Philosophical Underpinnings

Epistemological assumptions include drawing from the natural sciences to study social reality, truth can be deducted by deductive knowledge, knowledge is obtained from a theory or hypothesis, and knowledge is objective (Mack, 2010). The ontological view within the post positivism paradigm is that the world exists around us regardless of our

interaction within it. This research study was grounded in the post positivism paradigm. Within the post positivism paradigm lies the objectivism perspective. For the objectivist, meaning is already inherent within the object being studied and the properties of that object can be measured and quantified. Quasi-experimental research is placed within this ontological view due to the rigor that objective knowledge is valid evidence through scientific research (Duffy & Chenail, 2009). This quasi-experimental, descriptive, exploratory study lies within the post positivism paradigm in the objectivism perspective using a test-retest questionnaire design with statistical analysis, observations, and discussions. The hypotheses of the study was supported or denied as a result of the research conducted. Replication of such research led to better understanding of the phenomenon being studied.

Theoretical Framework

EI has be theorized into a four branch ability model. The order of the branches moving from perception to management of emotions represents the degree to which EI ability is integrated within the individual's personality (Mayer et al., 2004). The first two branches are mostly discreet areas of information processing that is bound within the system of emotions (Mayer et al., 2004). The last branch, branch 4–emotion management, must be integrated into an individual's life from personal to professional (Mayer et al., 2004). The four branches include (a) emotional perception and expression, (b) emotional facilitation (using EI), (c) emotional understanding, and (d) emotional management as shown in Figure 1.

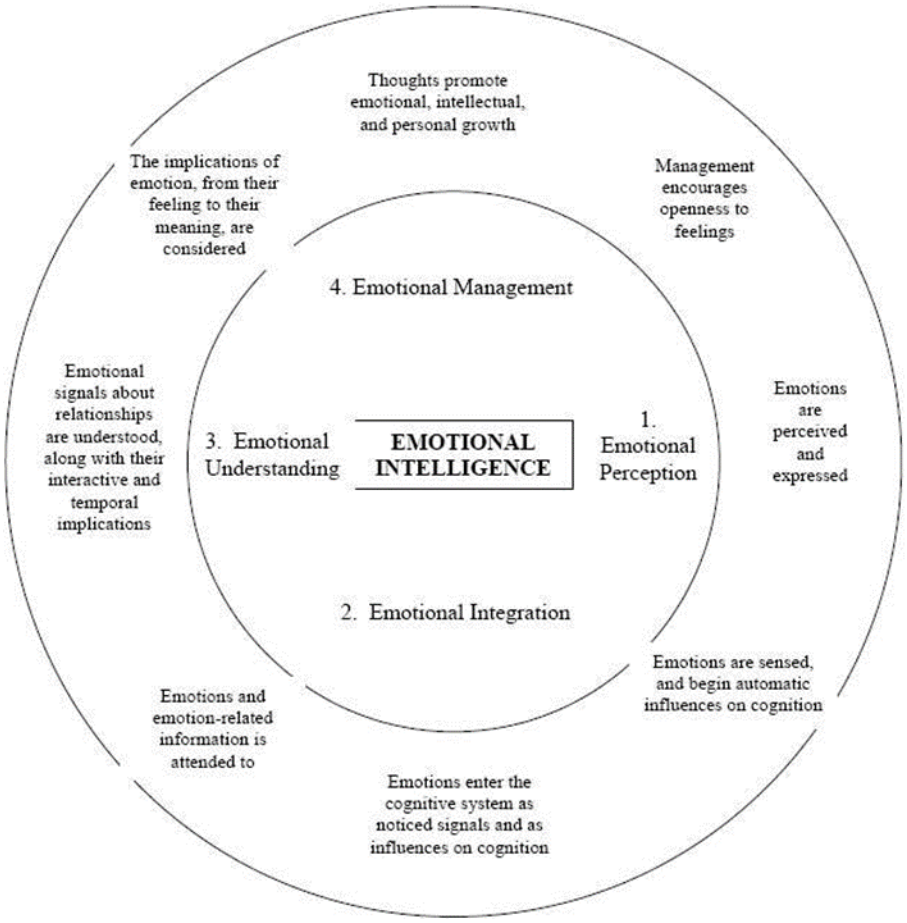

Figure 1. Mayer and Salovey's (1997) four-branch model of emotional intelligence.

Branch 1–emotional perception and expression, depicts how one perceives emotion and expression which includes the ability to recognize emotion in others' facial and postural expressions. This involves nonverbal perception and expression of emotion in others face, voice, and related communication modes (Mayer et al., 2004). Branch 2–emotional facilitation, depicts how emotions can facilitate thinking. Part of emotional facilitation involves developing a knowledge base about emotional experiences on which intelligence can be drawn (Mayer et al., 2004), in the vein of past emotional experiences can plan a role in future emotional experiences. Branch 3–the understanding of emotion, involves the capacity to analyze emotions, discern their probable trends over time and understand their outcomes (Mayer et al., 2004). Branch 4–emotional management,

reflects that emotions are managed in the context of personal and professional endeavors, self-knowledge, and social awareness (Mayer et al., 2004).

Empathy is a subcategory of Branch 1 and Branch 2 of the emotional intelligence model. Salovery and Mayer (1990) place empathy under the appraisal and expression of emotion of others. Empathy may be a significant characteristic of emotionally intelligence behavior (Salovery & Mayer, 1990). Empathy is based on one's abilities to understand another's point of view, to accurately identify another's emotions, to experience equal appropriate emotion in response to them, and finally to communicate and/or act on this internal experience (Salovery & Mayer, 1990).

Students can improve EI and empathy through experiencing the capstone clinical through the experiential immersive learning process. Using the Mayer-Salovey-Caruso Emotional Intelligence Tool (MSCEIT) prior to and at the conclusion of the experiential capstone immersive clinical experience course, the researcher can evaluate students' levels of EI and empathy. Through the students' experiences of seeing experienced nurses model expert behaviors, the students can use concrete experiences, reflective observation, abstract conceptualization, and active experimentation to add valuable needed knowledge to become confident competent novice nurses.

Theoretical Assumptions

It is assumed that EI has been theorized, conceptualized, and empirically tested to validate that EI meets the requirements of a standard intelligence. Theoretical assumptions include (a) EI test items have been constructed and operationalized in a way to have right and wrong answers, (b) EI shows correlations to known intelligences, and (c) EI should develop and increase with age (Mayer et al., 2004).

Definitions of Terms

Emotional Intelligence

Theoretical definition. From a theoretical perspective, EI refers to the cooperation between emotion and intelligence (Ciarrochi et al., 2000; Mayer & Salovey, 1997; Roberts, Zeidner, & Matthews, 2001). EI is included in the class of intelligences like social, practical, and personal intelligences. EI is defined as

> The ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (Salovey, Brackett, & Mayer, 2003, p. 35)

Operational definition. EI is operationalized in the use of the MSCEIT. The test consists of four abilities including (a) the perception and expression of emotion, (b) assimilating emotion in thought, (c) understanding and analyzing emotion, and (d) reflective regulation of emotion (Salovey, Backett, & Mayer, 2004).

Empathy

Theoretical definition. Empathy has been defined as the “ability to share in another’s emotions, thoughts, or feelings” (Merriam-Webster’s, 2005). Empathy in nursing and health care is based on Rogers’s (1959) definition which is "the ability of health care professionals to accurately understand patients, emotionally and mentally, as though they were in the patient's shoes, but without losing their status" (p. 6). Empathy which is also a subcategory of EI can be learned (Salovey & Mayer, 1990).

Operational definition. Empathy is based on one's abilities to understand another's point of view, to accurately identify another's emotions, to experience equal appropriate emotion in response to them, and finally, to communicate or act on this internal experience (Salovery & Mayer, 1990). The MSCEIT subscale of perception and expression of emotion consists of the empathy component.

Immersive Clinical Experience

Theoretical definition. Standard clinical experiences in nursing education are defined as a *hands on* or *on the job* training to practice nursing with a direct nurse educator supervising. This clinical experience is meant to be a safe environment to develop skills and attitudes needed in nursing practice. The 150-hour, immersive clinical experience provides senior nursing students with a one-on-one preceptor-student intensive to prepare students as they transition to beginning practice.

Operational definition. The immersive clinical experience is 150 hours of intensive clinical required in the final semester of the generic BSN program. Students are immersed in a practicing nursing experience in an area of interest.

Chapter Summary

Psychologists have studied emotions and intelligences as separate distinct entities for centuries. It was not until two decades ago that EI was mentioned in the literature, and in the last five years it has received widespread public attention. Mayer and Salovey's (1993) work on the first objective test for EI developed into the Multifactor Emotional Intelligence Scale which has been revised twice into the MSCEIT 2.0. The literature is abundant in applying the MSCEIT to leadership and management in the business world as well as studies among health care providers including medicine and nursing. What has

not be studied is applying EI using the MSCEIT tool in a capstone clinical course in the final semester of a BSN program. Using this instrument, a quasi-experimental study assessed if there was a correlation between EI and empathy in a capstone clinical course among senior students at a large Mid-south public university. It was hypothesized that the 150-hour, capstone clinical course would positively correlate to increased scores on the aforementioned assessment tool.

Chapter Two

Literature Review

Emotional intelligence (EI) has been studied predominantly in two areas: primary education, and corporate and managerial leadership. Only in the past few decades has the concept of EI been applied to the health care environment. Various disciplines within health care including medical and dental students, occupational and physical therapists, and radiology technologists have explored the theory and concepts of EI. In addition, nursing has delved into using EI in education leadership and management as well as in practice. The majority of these studies had similar conclusions including the higher the levels of EI the person possessed, the better he or she related to patients and colleagues. EI is an ability that can be learned and used effectively in caring for patients (Chaffey, Unsworth, & Fossey, 2012; Chew, Zain, & Hassan, 2013; Lewis, 2010; Lewis, 2011; Libbrecht et al., 2014; Lust & Moore, 2006; McKenna & Mellson, 2013; Meyer, Fletcher, & Parker, 2004; Todres, Tsimtsiou, Stephenson, & Jones, 2010; Victoroff & Boyatzis, 2013).

The literature review for this study examined research in EI in health care, especially in nursing and nursing education. In addition, the presence of empathy in nursing and nursing students was also explored. Finally, immersive clinical experiences to understand EI and empathy levels in nursing students was also reviewed. To confirm the need for studying the topic of EI and empathy among senior nursing students in an immersive clinical experience, a comprehensive literature review was completed using

electronic databases in the social and health sciences including CINHAL/EBSCO and ProQuest for books, peer-reviewed journal articles, and dissertations. Keywords used in the search included EI, empathy, immersive clinical experience, health care, nursing, and nursing education. Few studies were found regarding EI, empathy, and immersive clinical experience and nursing education, but many studies were found in EI and empathy related to the application of EI concepts and how they can be used in assessment, education, and training in health care including nursing.

This literature review is separated into three major categories: EI, empathy, and immersive experiential learning. Subcategories of EI are related to health care, academia in the health professions, and the nursing profession. Subcategories of empathy include nursing profession and nursing education. The variables of age and gender related to EI are also discussed. The immersive experiential learning category includes nursing education with a subcategory of capstone clinical.

Emotional Intelligence

Health Care

Higher EI has been shown to be a critical component for success in the clinical skills (hard and soft) of medical, dental, and nursing students (Lewis, 2011). Within the health care landscape, safety and competency in delivering care is highly valued. To accomplish this goal, members of the health care team must effectively relate to patients on a personal level to best understand their needs. Team members must be able to appraise and express emotions in themselves and in others, and to use them to emotionally connect to patients. Studying how the use of EI and empathy among the health care worker improves patient outcomes has shown that team members with higher

or more developed EI are more effective in delivering safe and competent care (Faguy, 2012; Meyer et al., 2004).

Research on EI in physicians is minimal, with foci on evaluating current levels of EI and using educational opportunities to increase levels of EI for those in need (Morales, 2014). Physicians in today's health care environment need to be emotionally intelligent. Hammerly, Harmon, and Schwaitzberg (2014) state two out of six core clinical competencies require physicians to be emotionally intelligent. They surveyed more than 5,000 health care professionals including over 3,000 physicians with a yield of more than 100,000 surveys. The physicians completed a *360-degee* survey tool, which is an innovative feedback survey. The researchers were able to review the physicians disruptive behaviors in an effort to change the negative behaviors to help the physicians become more emotionally intelligent and more effective members of the health care team (Hammerly et al., 2014). The results were preliminary with more data to be published.

In another study, an exploratory pretest-posttest design was used within a dental practice using the MSCEIT to assess EI levels among 15 employees including dentists and administrators classified to be at the executive level and in the upper socioeconomic status (Meyer et al., 2004). The practice was spread over a five sites; the dentists and administrators rotated between locations. Meyer et al. (2004) described the employees' interpersonal and intrapersonal skills as subpar by group leadership standards so an intervention was conducted. The novel "adventure-based" (Meyer et al., 2004, p. 227), one-day intervention was related to enhancing communication skills to facilitate productivity, performance, and satisfaction. The intervention was based on experiential education or *learning through doing* and consisted of individuals and groups completing

challenge courses of indoor and outdoor ropes at high and low elevations as well as initiatives. Safety was ensured during the physical activities, and facilitators were present to supervise the activities and debrief the participants. During the day-long intervention, facilitators provided processing and discussion sessions to connect the activities with concepts and issues related to their workplace. Results indicated a small but positive effect in the participants, but no significant changes in EI scores with the pretest mean 107.89 (10.89) and posttest mean 109.87 (10.94). The Cohen's *d* effects size was 0.36. The study had significant limitations due to the small sample as well as the exploratory nature of the study which may explain why no significance was found (Meyer et al., 2004).

Academia

In hopes of being able to provide more holistic patient care, medical schools have examined their curricula to evaluate how EI can be incorporated to instruct students in the use of EI in effectively communicating with patients (Weng, 2008). Consideration has been given to revising curricula to educate students in the effective use of EI in patient care (Austin et al., 2007; Cherry et al., 2014; Fletcher et al., 2009; Imran et al., 2013; Libbrecht et al., 2014; Stoller et al., 2013; Weng, 2008).

In a study by Austin et al. (2007), objectives were set to (a) compare empathy levels among medical students in different years of study, (b) examine gender difference in levels of EI and empathy, and (c) investigate whether EI and empathy were related to academic success. The study group included 273 medical students in their first and second year (preclinical), and fifth year (clinical), respectively. Study methods included participants completing a 41-item EI scale and the 20-item Jefferson Scale of Physician

Empathy (JSPE). Three subcomponents of the scale included (a) pptimism/mood regulation (a measure of interpersonal EI); (b) appraisal of emotions (a measure of ability to perceive emotions in others); and (c) utilization of emotions (a measure of using emotions in problem-solving). No significant differences were found in EI and empathy levels across students' years in the program. However, the data showed significant gender differences for the whole sample on EI, empathy, and the utilization of emotion subscale; with females scoring higher than males on all three subscales (t[268] ¼ 3.23, P ¼ 0.001; t[263] ¼ 2.43, P ¼ 0.016; t[268] ¼ 3.52, P ¼ 0.001, respectively). In addition, overall EI did not significantly affect academic success (Austin et al., 2007). Interestingly, peer ratings in the second year, problem-based learning groups showed students scoring higher on EI, and the appraisal of emotion subscale tended to have higher peer ratings. Further research in this area is needed to establish the cause of these results.

Similarly, Todres et al. (2010) completed an exploratory cross-sectional study using the MSCIET to investigate the association of EI with medical students' age, gender, ethnicity, and length of time in the program. The sample size was 263 participants. All levels of students were invited to complete the survey over a short time frame, with no intervention provided. Overall, no significant differences were noted in EI scores across groups, but significance was found in scores in the managing emotions branch in the final year compared with those in years one and two (95% CI [0.8–13.7] and [1.2–15.5], respectively). Results of the study included higher EI scores in the selected branches of MSCEIT in the later years of the program which suggest a benefit in implementing EI content in the curriculum. This may result in improved EI scores and increased interpersonal relationships with patients.

Chew et al. (2013) completed a cross-sectional, correlational study measuring EI using the MSCEIT, and academic performance using continuous assessments (CA) and final examinations (FE) in medical students in their first and fifth years, respectively. Participants totaling 163 (84 first-year students and 79 fifth-year students) were included in the study. Study results showed significant positive correlation between total EI scores and CA (p = 0.003), and total EI scores and FE (p = 0.01). Significant correlations were also shown among three of the EI branches and CA: perceiving emotions (p = 0.01); facilitating emotions (p = 0.03); and understanding emotion (p = 0.002). Two branches and FE showed significant correlations: perceiving emotion (p = 0.001) and understanding emotions ([p = 0.02], Chew et al., 2013). This study concluded that those with higher levels of EI performed better on continuous assessments and final examinations.

Imran et al.'s (2013) exploratory study included 431 participants who completed the Schutte Emotional Intelligence scale and Davis' Interpersonal Reactivity Index (IRI) in the first and final years in a Pakistani undergraduate medical school to determine levels of EI in the respective groups. EI subscales within the Schutte Emotional Intelligence (SEI) scale included the appraisal of emotions, regulation of emotions, and utilization of emotions. Subscales of the IRI included empathetic concern scale, perspective taking scale, and personal distress scale. Overall findings were not significant but significance was found in appraisal of emotions (p = 0.04), regulation of emotions (p = 0.05), empathetic concern scale (p = .007) and personal distress scales (p = 0.03). The results confirmed the need to incorporate EI in medical education to increase emotional

competency in patient centered care, patient satisfaction, and effective communication skills.

Fletcher et al. (2009) implemented a quasi-experimental, randomized controlled trial where they implemented seven EI workshops for third semester medical students. The researchers used the Dr. Reuven Bar-On (the BarOn Emotional Quotient Inventory (EQ-i) tool which measured similar aspects of EI as the MSCEIT. There were 70 participants in the study; 34 in the intervention group and 36 in the control group. The intervention workshops consisted of participants who met once a month for four hours over seven months and consisted of EI training through individual and group exercises. Results showed no significant difference within the intervention and control groups in the baseline (pretest) results. There was significance of ($p = 0.065$) in EI scores between groups in the posttest (Fletcher et al., 2009).

EI has been studied in OT and PT students at the graduate and undergraduate levels. Lewis (2010) studied PT students ($n = 56$) at the graduate level from four universities who were admitted to their perspective programs, completed the graduate record exam (GRE), and completed at least one clinical experience. EI was assessed using the MSCEIT with a significant relationship found when using the EI total score and the other potential predictor variables (pre-requisite GPA, GRE, age, school, and gender) combined to total Clinical Performance Instrument score ($R^2 = 0.36,\ p < 0.02$). Two individual predictors–age and pre-requisite GPA–showed significant prediction but no statistics were noted. Clinical performance added to the significance of EI and the total of the predictors. The author concluded that the results were due to the lack of sensitivity of

the tools used and of the homogeneity of the group as the participants were already admitted to their perspective programs (Lewis, 2010).

In 2011, Lewis completed a similar longitudinal study with doctoral PT students (n = 260) at four universities. The study compared students' levels of EI over a three-year period from year one to year three using the MSCEIT and related those scores to success on the licensure exam. Significance was found between those who failed and those who passed the EI experiential area, branch 2 (facilitating thinking; p =.04) and the total score. (p = .05). Results showed no significance over time with all other predictors but significance was shown among EI in students who passed the licensure exam and those who did not (Lewis, 2011).

Andonian's (2013) work used the MSCEIT to evaluate levels of EI and the Fieldwork Performance Evaluation for the Occupational Therapy Student (FWPE) to evaluate field work and self-efficacy in OT students (n = 199) from 36 OT programs in the United States from undergraduate and graduate programs. Students with higher EI branch scores in understanding emotions were significantly more likely to have higher scores in FWPE subcategory of intervention (p = .160). The EI branch score for managing emotions was significantly positively correlated with clinical related to the FWPE sub category of communication (p = .155). No significance was found between EI and self-efficacy (Andonian, 2013).

Larin et al. (2011) studied PT and nursing students' EI levels in a university which offered both programs, and PT students from a collaborative university. Participants consisted of 61 undergraduate nursing and 21 graduate PT students from one university using problem-based learning (PBL) methods and 38 undergraduate PT

students from the other which used conventional educational methods. The study included a baseline test using the EQ-i tool at the beginning of their first year in their respective programs and a posttest at the completion of their first clinical experiences. Significance was noted in the groups at the university in which PBL was utilized, but not with the university which used conventional educational methods ($p = 0.026$; Larin et al., 2011).

EI has been studied among dental students in didactic and clinical education. Victoroff and Boyatzis (2013) studied the relationship EI has in dental students' clinical performance Emotional Competence Inventory-University version (ECI-U), a 72-item, 360-degree questionnaire completed by both self and other raters. The ECI-U measured 22 EI competencies grouped into four clusters (self-awareness, self-management, social swareness, and relationship management). Dental students in years three and four were participants in the study ($n = 100$) with 62 third-year and 38 fourth-year students. Clinical grades in third year and fourth were highly correlated ($r = 0.618$, $p < 0.01$). From the results of these studies, the researchers concluded that students with the highest EI scores were most successful in didactic and clinical education.

Collins (2013) used MCEIT in a cross-sectional quantitative correlation study to collect data in student nurse anesthetists at three stages in their program of study (from three difference classes at matriculation, after year one of study and in the final semester). The sample ($n = 216$) consisted of 69 males and 147 females. Task subscales within the MSCEIT with significance were (a) facilitating task ($p = .006$); (b) sensations task ($p = .015$); and (c) facilitating branch ($p = .013$; Collins, 2013). Results were not significant

in total EI scores and there was no increase at the third evaluation. However, no intervention was set forth in the study so the results were just descriptive in nature.

Nursing Profession

The literature supports the importance of EI concepts in nursing practice. EI needs to be taught in theoretical content and applied in clinical experiences as it can impact the quality of student learning, ethical decision-making, critical thinking, and evidence based practice (Smith et al., 2009). Perceiving and understanding emotion is a core nursing skill (Freshwater, 2004; Freshwater & Stickley, 2004; McQueen, 2004; Smith et al., 2009). Improving EI and empathy competencies will allow for more effective nurse-patient relationships. Many theoretical articles and research studies support the notion that EI and empathy are critical in nursing practice. This assertion is based on the assumption that understanding, perceiving, and expressing emotion is essential to a profession that requires sensitivity within therapeutic relationships (Bellack, 1999; Bellack et al., 2001; Chabeli, 2006; Freshwater & Stickley, 2004; Gooch, 2006; Kerfoot, 1996; McQueen, 2004; Reeves, 2005; Strickland, 2000; Wasyiko & Stickley, 2003). Emotions are perceived as vital to trustworthy, sincere, and compassionate relationships; therefore, understanding emotion is a professional requirement of competent nursing practice (Bellack, 1999; Freshwater, 2004; McQueen, 2004). Considering emotions are viewed as a central component of clinical decisions, the notion exists that EI is therefore central to quality clinical decision making which is validated and supported in the literature (Facione & Facione, 1996; Smith et al., 2009). Emotions are key indicators of ethical and value-driven decision making in practice, leading to more empathetic, patient-focused

decisions (Evans & Allen, 2002; Freshwater & Stickley, 2004; Gooch, 2006; Smith et al., 2009).

EI levels of staff nurses who precept nursing students were studied by Harper and Jones-Schenk (2012). Participants included a convenience sample (n = 42) from six community hospital in two states. Participants completed the EQ-i survey online. The mean total EI score for the participants was 102.45, which is in the average range of 90 to 109. A below average for total EI was scored by 19% of the participants, whereas 31% showed a higher than average EI level. Staff nurses with above average and high levels of EI were shown to be more successful as a group and chosen by programs of nursing to precept their students. Findings indicated a negative correlation between age and empathy ($r(40) = -0.32$, $p = .041$) which is concerning considering the average age of nurses is 46 years. The researchers also concluded professional development activities need to enhance EI (Harper & Jones-Schenk, 2012).

EI in nursing has also been studied among nurse leaders. Possessing strong EI abilities is an essential leadership skill that benefits the organization, nurses, and nurse managers (Herbert & Edgar, 2004; Muller-Smith, 1999; Smith et al., 2009; Snow, 2001). Nurse executives, leaders, and staff nurses must have leadership skills to be able to be effective in the work environment. Those who have a high level of EI and can navigate interpersonal relationships with the health care team and the patients have less stress and more success in providing quality care (Adams & Iseler, 2014; Adams, McCabe, Zundel, Price, & Dahl, 2011; Bone, 2002; Budnik, 2003; Carson et al., 2005; Codier et al., 2013; Codier et al., 2008; Codier et al., 2009; Vitello-Cicciu, 2003). Nurses who have had success in leadership roles have been found to have high levels of EI as well. The higher

nurses' EI the more successful they are in their positions. This emphasizes the need for nursing education to incorporate EI in their programs.

Across nursing specialties, EI has been studied to emphasize its importance in providing safe, competent care to patients. Staff nurses were studied in a correlation study relating EI and quality of care (Adams & Iseler, 2014). The MSCEIT was used as the instrument in the study which showed a positive correlation in quality of care (QOC) and compliance with care (CWC) indicators including infection control, falls, and ulcer screenings. EI was significantly correlated ($p < .001$) with the QOC variables of C-difficile infections, MRSA infections, and patient falls with injury. EI was significantly correlated ($p < .001$) with only one CWC variable–pressure ulcer screening). In another study, mental health nurses used the components of EI to engage in a qualitative research study. Interview questions were gleaned from the EI literature. Participants were mental health nurses with five or more years of experience within the discipline; seven informants were included in the study. Four emerging themes resulted from the interviews as follows: (a) relationship with the patient, (b) the substance of supervision, (c) motivation, and (d) responsibility. The study concluded that EI stimulates the search for a deeper understanding of a mental health nursing identity. Emotional learning and maturation processes are central to professional competence (Akerjordet & Severinsson, 2004).

Codier et al. (2008) conducted a quantitative study to measure EI as it related to performance levels among staff nurses in three hospitals in Honolulu, Hawaii. Thirty-six registered nurses were recruited to participate in the study. Within the sample, 30% of the staff nurses were on the clinical ladder; 70% were not. The MSCIET was completed by

37 pariticipants ($n = 37$). Results showed statistical significance in total EI as it correlated with performance at a significance level of ($p \leq .05$). Nurses on the clinical ladder had higher levels of EI than those not on the ladder. In addition, nurses who were on the clinical ladder also scored higher on the two EI subcategories of perceiving and using emotions ($p \leq .05$). There are significant limitations to this study as the sample is small and the clinical ladder participants were in the minority (Codier et al., 2008).

Codier et al. (2009) studied EI and caring among three generations (Millennial, Gen X, and Boomer) of practicing nurses from two data sets—one from an urban Nebraska hospital and one from urban hospital in Honolulu, HI—using the MSCEIT. The Nebraska cohort had 142 participants and the Hawaii cohort had 299 participants for a total of 442 participants ($n = 442$). Positive correlations were noted in total EI scores and age in the Boomer generation ($p < .05$), EI branch understanding emotions and age in the Millennial generation ($p < .05$), and EI branch using emotions to reason and age ($p < .05$). A limitation of the study is the majority of participants were female (Codier et al., 2009).

Emotional Intelligence, Age, and Gender

Findings that female and older respondents tend to obtain higher EI scores are consistent with the literature (Carrothers et al., 2000; Ciarrochi et al., 2000; Mayer et al., 1999; Mayer et al., 2002; Palmer et al., 2005; Van Rooy et al., 2005). Females scored higher levels of EI in a study of medical school students in Lahore, Pakistan in their first and final years of undergraduate study in two institutions (Imran et al., 2013) but findings were not significant. Todres et al. (2010) found women scored slightly higher than men in all categories of the MSCEIT with statistical significance in the perceiving emotions

branch (95% CI [1.4–8.8], [2.1–9.7], and [1.3–9.3], respectively). Research in EI compared it with age in the majority of studies showing increased EI with increasing age. Studies confirmed that differences in EI levels and age exist. Younger students (under 25 years) achieved significantly lower scores in two branches of the MSCEIT, understanding and managing emotions (95% CI [–8.9 to –2.7], [–8.2 to –1.6], and [–7.4 to –1.2], respectively; Todres et al., 2010).

Empathy

Ioannidou and Konstantikaki (2008) remarked that empathy is one of the key features of EI. Empathy is a qualitative appreciation o*f* the feelings of others (Akhtar, 2013). It is a powerful and effective communication tool that is often underused and misunderstood (Ioannidou & Konstantikaki, 2008). Empathy is an essential component in the health care environment and a characteristic that all health care professionals should possess (Davies, 2014; Ioannidou & Konstantikaki, 2008). The healing therapeutic interpersonal relationship between the health care professionals and the patient are essential to safe and quality care (Ioannidou & Konstantikaki, 2008; Larson & Yao, 2005). A subscale of evaluating EI is the expression and understanding of empathy. Interpersonal relationships among health care providers including nurses and their patients need to be therapeutic in nature; using EI and empathy can provide a positive environment for healing to occur (Faguy, 2012; Ward et al., 2012). It has been found that females are more empathetic than males regardless of the profession (Arora et al., 2010; Austin et al., 2007; Imran et al., 2013; McKenna et al., 2012). This may explain why the majority of nurses are females and more empathic towards their patients, but as Ward et al. (2012) discovered, nursing students are less empathic than educators expected when

studied. The Jefferson Scale for Empathy for nursing students was used to assess nursing students' empathy levels in 214 students at a private school in the northeast (Ward et al., 2012). Statistical results showed a statistically significant decline in levels of empathy for nursing students with increased patient encounters when compared to those with less encounters ($F[2, 211] = 4.2$, $p < 0.01$). The researchers had little explanation as to why this occurred but provided similar studies with the same results (Ozcan, Oflaz, & Sutcu Cicek, 2010; Ward et al., 2009)–the more exposure to patients in the clinical setting the less empathetic they are.

Morse et al. (1992) discussed empathy as a core concept in nursing care and the need for it to be defined and implemented when caring for patients. Few studies have suggested that those with a higher level of EI are also more empathetic (Martos, Lopez-Zafra, Pulido-Martos, & Augusto, 2013). Martos et al.'s (2013) study sought to correlate levels of EI with empathy. Participants (n = 242) were recruited from private and public employment sectors in Spain, outside of health care. It was found that those with high EI had more effective interpersonal relation nships both personally and professionally, and they also had higher empathy levels in management of own emotions ($p = .031$) and management of others emotions ($p = 0.16$). Results also correlated with EI more than personality factors alone, and supported the capacity that empathy begins with the ability to understand the emotions of self to be able to understand emotions in others (Martos et al., 2013).

Health Care

Empathy was also included in indicators in dentistry education where students were evaluated in EI and social intelligence. Yarascavitch, Regehr, Hodges, and Haas

(2009) concluded that students in medicine, dentistry, and nursing had declining levels of empathy when assessed with known tools for measuring empathy, but by using a new tool they developed, new findings emerged. These new findings included increasing levels of empathy with increasing levels of increasing emotional competence. The new tool was used to measure empathy levels among 178 dental students to observe changes in empathy levels. The tool measured emotive and cognitive types of empathy in personal and professional contexts. Results showed in the professional context that there was a similar main effect of empathy type ($F[1, 174 = 518]$, $p < .001$), reflecting overall higher scores in emotive dimensions over cognitive dimensions. However, there was also a significant effect of training ($F[3, 174 = 3.17]$, $p < .05$) and significant training by type interaction ($F[3, 174 = 6.49]$, $p<.001$), suggesting that training was affecting professional types of empathy but that the effect of training was different for emotive and cognitive empathy in this professional context (Yarascavitch et al., 2009). The authors concluded that empathy can be taught.

Nursing Profession

Contemporary studies in empathy among professional nurses is scarce. More literature is present related to EI and empathy. All nurses must be able to connect with their patients on an interpersonal level using EI and empathy. Nurses control the healing environment with the care they provide. To provide a positive healing environment nurses need to be emotionally competent and empathetic (Faguy, 2012; Ward et al., 2012). Skinner and Spurgeon (2005) studied middle/senior level health managers some of which were nurses ($n = 96$). Results were statistically significant between inter-correlations between empathy and leadership scales with the transformational leadership

styles for four subscales of empathetic concern (p = 0.30), perspective taking (p = 0.33), personal distress (p = -.26) and empathetic matching (p = 0.31). Van der Cingel (2014) studied nurses working in geriatric care and summarized the more compassionate, caring, and empathetic the nurse is the better quality of care. The author stated nurses who possess the characteristics of using the best scientific evidence and intuitive knowledge are good nurses, but they may still miss the characteristics of caring, compassion, and empathy (van der Cingel, 2014).

Nursing Education

Nursing education needs to improve in fostering empathetic behaviors and other therapeutic communication techniques in students (Pike, 1990). In the early 1990s the Commission on Collegiate Nursing Education suggested BSN programs add empathy education to the curriculum; however, there is little evidence that this has been embraced by universities (Ward et al., 2012). Within the nurse-patient relationship empathy is considered one of the skills of greatest importance (Smith & Leir, 2008; Ward et al., 2012). It has been hypothesized that nursing students levels of empathy have dramatically declined compared to students in the past. In a longitudinal study among 214 undergraduate nursing students, results showed a decline in empathy in the total sample, which was statistically significant (t[212] = 1.97, p = .05), but it was not practically important as indicated by the effect size (−0.16; Ward et al., 2012). Lovan and Wilson (2012) studied nursing students' levels of empathy using the Jefferson Scale of Empathy at the beginning and conclusion of a nursing program. Participants were nursing students (n = 49) with half in semester one and half in semester four. In an independent samples t test revealed the two group scores were not significantly different (t[47].347, p > .05;

Lovan & Wilson, 2012). Results were significant in levels empathy and did not increase as a result of nursing education; thus, the authors concluded that empathy should be incorporated in the curriculum (Lovan & Wilson, 2012).

Gunther, Evans, Mefford, and Coe (2007) researched the relationship between leadership styles and empathy among student nurses in an exploratory descriptive study. Traditional students (n = 178) enrolled in their junior (n = 92) and senior (n = 86) level leadership course were recruited as study participants. Statistically significant results found more empathy in both junior and senior level students with transformational leadership styles.

Some studies have explored empathy related to specific disease conditions. Students who cared for those with mental illness, mental disabilities, dementia, and Alzheimer's demonstrated adequate empathy but the level of empathy could be improved (McKenna et al., 2012). In this study of 106 students (92% female), levels of empathy were measured using Jefferson Scale of Physician Empathy (JSPE), Health Professional (HP) version and the Medical Condition Regard Scale (MCRS). An acceptable level of empathy in nursing students was shone using the JSPE when compared to standard JSPE levels (M = 107.34, SD = 13.74); however, this score was lower than other study results finding years of study (p = 0.215), age group (p = 0.795), and gender (p = 0.088).They also found that those patients with a substance abuse diagnosis received less empathy from students (McKenna et al., 2012). Cinar, Cevahir, Sahin, Sözeri, and Kuguoglu (2007) studied empathy in students (n = 104) using the Empathetic Skill Scale which was used to measure the skill for empathy building. Results found a statistically meaningful relationship regarding the average empathic skill points between grade two and grade

four ($z = 2.609$, $p = 0.009$) and between the grade three and the grade four ($z = 2.130$, $p = 0.033$). The authors suggested incorporating empathy and therapeutic communication in the psychiatric content within the curriculum would improve empathy levels among students (Cinar et al., 2007).

Experiential Learning

In nurse education literature, there is a growing trend to associate empathy with EI (Evans & Allen, 2002; Freshwater & Stickley, 2004; Hurley, 2008; McQueen, 2004). Such EI is often associated with experiential learning and learning from the lessons of life experiences, especially from events that have brought powerful emotions such as pain, loss, fear, joy, love, disappointment, hopelessness, and despair (Williams & Stickley, 2010). Developing meaningful interpersonal experiences between the student and the preceptor as well as the student and the patients within the nursing profession can be accomplished through BSN nursing education in the senior capstone clinical experiential learning experience (Rebeschi & Aronson 2009). In the 2009 work by Rebeschi and Aronson, participants ($n = 73$) completed a capstone clinical experience in the final semester of the program. Results included the mean GPA of the post-capstone group of 3.25 (on a 4-point scale) with a range of 2.79 to 3.91. The difference between the pre-capstone and post-capstone group GPA was statistically significant ($p = .037$), and the post-capstone group had overall higher GPAs. Additionally, the difference between the pre-capstone and post-capstone group age was statistically significant ($p = .002$), with older students in the pre-capstone group. One conclusion of the study was that capstone increased the students' GPA, but the confidence in the conclusion is not strong when the statistics are evaluated (Rebeschi & Aronson, 2009). There has been no other study

relating immersive clinical experiences and EI in nursing. Students who are immersed in real-world nursing can begin to understand the soft science of caring, compassion, and empathy as profound emotional elements to possess. No studies have explored if fostering the use of EI and empathy during the immersive capstone clinical will assist students in a successful transition into practice.

Nursing Education

Mixed results from studies exist regarding an increase or decrease in empathy with increasing clinical experience. Sheehan, Perrin, Potter, Kazanowski, and Bennett (2013) used the Jefferson Empathy Scale to evaluate levels of empathy for five groups of students over a five-year time period from 2008 to2012. Students completed a course entitled Understanding Suffering in which the scale was completed in a pretest-posttest fashion. Researchers combined the statistics from 2008 to 2012, in which a *t* test revealed a statistically reliable difference between the mean pre-course empathy score (M = 116.95, s = 9.803) and the mean post-course empathy score (M = 123.97, s = 7.782; $t[214] = 5.755$, $p = < .001$; $\alpha = .05$). Overall, the data showed that empathy scores increased an average of 7.02 points from the beginning of the course to the end of the course (Sheehan et al., 2013). In this study, participants had high baseline empathy levels which may account for the difference in results compared with the findings of Ward et al. (2012) and Ozcan et al. (2010) which found levels of empathy declined over the course of the nursing program. Many nursing curricula have removed courses dedicated to nursing theory and caring models. Unless the basis for the curriculum is based on a nursing theory of caring, students are not purposely taught the soft science of nursing which would be taught in the theory and caring courses. Nursing educators assume the soft

skills will be taught as a consequence of clinical experiences either faculty directed or preceptor assisted. Nursing education has come to realize that this is an ineffective way of educating students in the soft science or skill of nursing. Idczak (2007) concluded clinical experiences provide valuable opportunities to learn the art as well as the science of nursing. Harper and Jones-Schenk (2012) studied levels of EI among staff nurses who precepted students in the clinical settings in a one-on-one scenario. Preceptors who possessed the higher levels of EI and who were most successful in their current positions were chosen. Partnering with staff nurse preceptors who are emotionally intelligent will provide students with proper role models during their clinical experiences.

Immersive capstone clinical. The immersive capstone clinical provides senior students with real life interactions with patients to better understand patient health and illness conditions as well as empathize with the patients' circumstances. In providing emotional and empathetic care, students will be able to practice using EI and empathy as they learn more about what that means. A study by Cherry, Fletcher, O'Sullivan, and Shaw (2012) described the benefits of providing the use of EI and empathy in the final year or semester of instruction and education. They also recommended including experiences over a short period of time instead of longer time period (Cherry et al., 2012).

Offering a capstone immersive clinical experience over a short amount of time with the focus on interpersonal skills and communication with the health care team and the patient and their family will allow students to learn and improve EI and empathy skills. Pairing competent emotionally intelligence and empathic staff nurse preceptors will provide the best possible learning opportunity for nursing students in the clinical

capstone immersive learning experience. There is a call within nursing research and scholarship to explore the influence of emotion within caring relationships, health and healing, and organizations (Smith et al., 2009). Therefore, the researcher for this study sought to add to the correlation of EI and empathy as a result of immersive clinical capstone experience.

Chapter Summary

Studies have supported a relationship among EI and empathy in health care and nursing students and professionals; however, there is a need to add to this body of knowledge in regards to verifying that EI and empathy can been learned and increased across academic programs to improve students' readiness to practice. Nursing education must address EI and empathy education in its curriculum. A suggested starting point is in the clinical setting. Incorporating EI and empathy as students care for patients in the capstone immersive clinical experience is hypothesized to increase those levels. It has been suggested that this can be effective. Students must learn how to understand and to manage emotions in themselves and in others, and there is no more appropriate environment to learn those skills other than in an immersive clinical capstone course.

Chapter Three

Methods

This study evaluated changes in emotional intelligence (EI) and empathy in senior nursing students who completed an immersive experiential learning clinical. The purpose of the study was to determine if there is a difference between the concepts of EI and empathy of senior students before and after the completion of a capstone clinical course in a generic baccalaureate program. Providing an experiential immersive clinical experience was hypothesized to increase EI and empathy, along with covariates including age, gender, and prior health care experience (HCE) which may also correlate with changes in EI and empathy. The results of this study will add to the body of knowledge regarding EI in nursing education.

Research Design

The study consisted of a quasi-experimental, descriptive, exploratory, comparative design as this particular design allows relationships between and among variables to be examined (Polit & Beck, 2012). Senior nursing students completed an instrument that measured the research variables of interest, EI, and empathy before and after the completion of capstone immersive clinical experience.

Research Assumptions

Within the quantitative research paradigm, which was the design of choice for this study, a set of assumptions were recognized. It was assumed that the theoretical foundation chosen for the study had been tested and was an accurate reflection of the

phenomenon being studied. It was further assumed that the phenomena being investigated had been clearly defined with variables that were measurable, and the chosen instruments for measuring constructs were valid and reliable (Polit & Beck, 2012). The researcher also assumed participants' self-reporting of demographic data and testing data were accurate and honest over time, demonstrating test-retest reliability. Finally, it was assumed quantifiable research data resulting from this study could be generalized to populations comparable to itself (Polit & Beck, 2012).

It was important to understand the researcher's assumptions and bias related to this study. The researcher was in no way involved in the capstone clinical in which seniors were participating. Students' interests were matched with available clinical placements for the immersive experiential learning experience. This personal experience was aligned with the personal nature of ability in EI and empathy. Maturation may have created a threat to validity, but was statistically controlled.

Setting

The study took place at a mid-south, public University. The university had a School of Nursing in which approximately 500 students enrolled in the generic BSN, RN-BSN, and MSN programs. The undergraduate nursing program at the aforementioned institution was accredited by Commission on Collegiate Nursing Education and the State Board of Nursing. The generic BSN programs at the respective university had a capstone clinical practicum at the end of the program of study. The capstone immersion clinical experience consisted of 150 hours of the student-preceptor dyad which provided care for patients during the preceptors work days. Clinical immersion experiences occurred in community health care delivery facilities in the vicinity of the university.

Sampling Plan

Sampling Strategy

The sample consisted of a convenience sample of senior nursing students in the generic pre-licensure program who were enrolled in the capstone clinical course. Participants were recruited from capstone clinical classes during the final semester of the nursing school program from the aforementioned university's generic BSN senior nursing students enrolled in the capstone clinical course.

Eligibility Criteria

Inclusion criteria. All students enrolled for the first time in the generic BSN senior capstone clinical course at the participating university were eligible to participate in the study.

Exclusion criteria. Students who were not enrolled in the generic BSN senior capstone clinical course were excluded from the study as well as those who were unsuccessful in the course and who were repeating it. Students who were Licensed Practical Nurses in the course were also excluded.

Determination of Sample Size: Power Analysis

The total sample size for this study was 60. The sample size was determined for each hypothesis using G*Power 3.1, an online freely accessible computer program for calculated power analyses (Faul, Erdfelder, Lang, & Buchner, 2007). G*Power is used to calculate the sample size of studies based on the type of statistical test, one or two-tailed tests, effect size, statistical significance level, and power (Faul et al., 2007). For this study, three hypotheses were tested. Hypothesis 1 considered paired *t* tests using a medium effect size of 0.30, statistical significance of 0.05, and power of 0.95 which

resulted in a sample of 45. Hypotheses 2 and 3 considered repeated measures within factors in an independent *t* test with a medium effect size of 0.5, statistical significance of 0.05, and power of β-1 or 0.95 requiring a sample size of 45. Based on these calculations, a sample of 60 was sought, taking attrition threats into consideration.

Protection of Human Subjects

Institutional Review Board (IRB) approval from Nova Southeastern University and the institution under study was obtained prior to commencement of the study (see Appendix A). It was determined that there was minimal risk to study participants as the study consisted of a survey. Once IRB approval was obtained, permission to access senior nursing students in the School of Nursing was obtained from the Dean of the College of Behavior and Health Sciences (the college in which the School of Nursing is a department) and Director of the School of Nursing (see Appendix B). The participants were provided with an introductory letter that described the researcher, the institution of affiliation, the purpose of study as well as the risks and benefits of the study and the insurance for anonymity of voluntary participants.

All collected data were under the supervision of the researcher only. All research results were reported using group and aggregate data only. Enrolled participants were free to withdraw from the study at any time. All identifiable data collected was coded to assure anonymity and protection of the participants.

Risks and benefits of participation. Participants had minimal risk as inclusion in the study was strictly voluntary as was withdrawing at any time. Benefits included participants having the opportunity to discover their levels of EI and empathy prior to and at the conclusion of the immersive experiential learning clinical. Participants had an

increased understanding of EI and empathy which translated into their interpersonal interactions with team members and the patients they served.

Data storage. All data collected in the study was password protected electronically on the researcher's encrypted computer and saved for a minimum of six years after the completion of the study. The researcher's computer was secured under lock and key within the researcher's office which was housed within the School of Nursing which was also locked when unoccupied. The researcher assumed full responsibility for the security of the data. As data was entered into the statistical management system and was coded so that all participants were de-identified. This process used student names which were removed when merged and converted in the Statistical Package for the Social Sciences (SPSS) Version 23 software. At the occurrence of the sixth year, all files and documents will be erased and shredded as per institution guidelines.

Procedures

Once IRB approval was granted, the study was initiated with approval from the School of Nursing which agreed to allow the researcher access to senior nursing students. The course coordinator of the capstone clinical course was contacted via email to schedule time for the researcher to access the students. Included in the email was information about the study's purpose, methodology, data collection, and data analysis along with a copy of the student letter of participation (see Appendix C). When the researcher met the prospective participants, the risks, benefits, and the procedures included in the study were explained. The researcher asked those who agreed to be participants in the study to complete the informed consent as well as the demographic

survey (see Appendix D) at that time. The consent forms were collected and held in confidence by the researcher. The demographic survey included the participants' name which was converted into codes to ensure their anonymity. Within the demographic survey, participants were asked to include their contact information in the form of email addresses which are initials only and not identifiable. Those who agreed to participate were given written instructions on accessing the MSCEIT online and instructed to complete the test prior to their clinical capstone experiential learning experience. During the meeting scheduled during the first class meeting with the capstone clinical class, participants were instructed to complete the pretest prior to the beginning their first clinical day. The MSCEIT was completed by the participants online either at the School of Nursing, the university library, or at a personal computer. Participants were responsible to complete the MSCEIT individually. Participants spent their assigned time in the capstone immersive clinical experience. At the conclusion of the clinical experience participants were reminded to access the MSCEIT online and complete the posttest. Survey results were accessed on the tool's password-protected, secure website which was then coded and entered into SPSS for data analysis. Results identified the participants by name, but all names were removed and converted into a code when the data was entered into the SPSS database. Upon completion of the pretest and posttest, participants received a $10 gift card for a local beverage company. At the conclusion of data collection, participant's pretest and posttest results were compared with the collected demographics. This procedure took place for two consecutive blocks during the semester to allow for attaining adequate sample size so the researcher initiated the procedure twice.

All data obtained from study participants was entered into SPSS for analysis by the researcher. Data access was limited to the researcher exclusively. All data was protected as mentioned previously.

Study participants were contacted by the researcher via the course learning management system to remind them to complete the pretest before they began their clinical, and then completed the posttest at the conclusion of their experience. Reminders were posted in the course learning management system two weeks before the end of the course, at the end, and then one week after the course to insure participants would successfully complete all components of the study. Email reminders were sent to individual participants to remind them to complete the tool.

Instrumentation

One instrument was used in this study to measure both EI and empathy. EI and empathy was measured using the Mayer-Salovey-Caruso Emotional Intelligence Test V2.0 (MSCEIT). The researcher created the demographic survey (see Appendix D) used to gather descriptive data including age, gender, prior degrees, and prior HCE. These covariates were utilized in comparing differences among the gender and prior HCE groups.

Instrument 1: Mayer-Salovey-Caruso Emotional Intelligence Test V2.0

The MSCEIT consisted of 141 individual items in four major categories and took approximately 30 to 45 minutes to complete. MSCEIT provided 15 main scores: Total EI, two Area scores, four branch scores, and eight task scores. MSCEIT had a validity or r = .93 for general, and .91 for expert scoring (Mayer, Salovey, Caruso, & Sitarenios, 2003) and an inter-rater reliability of r = .86 (Brackett & Mayer, 2003). The reliability of

the Perceiving Emotion branch scores were $r = .91$ and .90 for general and expert scoring, respectively. The reliability of the Facilitation Emotion branch scores were $r = .79$ and .76 for general and expert scoring, respectively. The reliability for Understanding Emotion branch were $r = .80$ and .77 for general and expert scoring, respectively. The reliability of the Managing Emotion branch scores were $r = .83$ and .81 respectively.

Internal consistency was considered a measure of both reliability and validity. It determined whether the items in the instrument were measuring the same construct. Brannick, Wahi, and Goldin (2011) determined the Cronbach's alpha used to measure the internal consistency of the items in the MSCEIT ($\alpha = 0.79$).

Validity. The definition of validty includes asking if the instrument measures what it is supposed to measure. Multiple studies have shown the reliability of the construct validity measures. Five thousand adults completed the survey with a reliability score of $r = .86$.

Reliability. Cronbach alpha reliability coefficients of the MSCEIT was $\alpha = 0.79$, overall. This has been reached in a number of studies. Maul's (2012) study resulted in an $\alpha = .85$. An $\alpha = .90$ was resulted in Austin's (2010) research. Mayer, Panter, and Caruso's (2012) study yielded an $\alpha = .86$. Mayer, Salovey, and Caruso (2012) compared these three results and determined reliability.

Scoring. The instrument was scored using a 5-point Likert scale for each item in four dimensions. The identifying emotions descriptors were 1 (none) to 5 (very much). The using/facilitation descriptors were 1 (not useful) to 5 (useful). The understanding emotions descriptors used a best choice for overwhelmed, depressed, ashamed, self-conscious, and jittery. The managing emotions descriptors were 1 (very ineffective) to 5

(very effective). Scoring for the four dimensions included (a) 0-70 needs improvement, (b) 70-90 consider developing, (c) 90-110 is competent, (d) 110-130 is skilled, and (e) > 130 is expert (http://www.unh.edu/emotional_intelligence/index.html).

General Statistical Strategy

Study participants were entered into the SPSS software which had been installed onto the researcher's password-protected computer which was secured in the researcher's locked office. Demographic data obtained from participants was entered into SPSS and aligned with data obtained from the electronic survey. Using parametric tests, the relationship between theoretical constructs was analyzed. Data was measured as continuous interval or ratio scales based on the instrument characteristics.

Data Cleaning

All data from surveys were examined for completeness. The MSCIET assessment reported only completed tests which were entered into SPSS. Checks were conducted to minimize data entry/transcription error. All reported data from MHS assessments were entered into the database. Once all data was entered, the scales were calculated.

Outliers were defined as any score falling above or below three standard deviations from the mean and were identified by scatter plot. All outliers were examined to discern if they should be included in the population from which the sample was intended; then, it was decided if they were retained or adjusted.

Descriptives

Descriptive statistics were used to describe the sample and provide measures of central tendency for the variables EI and empathy.

Reliability Testing

Internal consistency was assessed by calculating Cronbach's alpha reliability coefficient measures on the obtained data using SPSS software. Alpha coefficients were accepted when they were greater than 0.7 with a statistical significance of $p \leq 0.05$. The research hypothesis was rejected and the null hypothesis accepted if the alpha coefficients were less than the predetermined value.

Hypothesis Testing

Three hypotheses were examined in this study.

Research Hypothesis 1. There was a difference between scores in EI and empathy among senior nursing students before and after completing a capstone clinical practice experience in the final semester of a BSN program. Differences between repeated measures were tested using paired *t* tests. The dependent variables were the EI and empathy, and the independent variable was the capstone immersive clinical experience.

Research Hypothesis 2. There was a difference in scores of EI and empathy related to gender among senior nursing students who experienced a capstone clinical. Differences between repeated measures were tested using an independent samples *t* test. The dependent variables were EI and empathy, and the independent variable was the capstone immersive clinical experience with gender as a covariate.

Research Hypothesis 3. There was a difference in scores of EI and empathy among students with prior HCE. Differences between independent samples *t* test. The dependent variables were EI and empathy, and the independent variable was the capstone

immersive clinical experience with prior HCE as an emergency medical technician (EMT)/paramedic or certified nurse assistant (CNA) as the covariate.

Chapter Summary

This study has been proposed to begin addressing a gap in nursing education regarding students' levels of EI and empathy once they have completed a capstone clinical emersion experience. The proposed quasi-experimental, descriptive, exploratory, comparative study tested three hypotheses as follows: (a) among senior generic BSN students is there a significant difference in levels of EI and empathy at the conclusion of the capstone clinical emersion experience; (b) among senior generic BSN is there a significant difference in levels of EI and empathy related to gender; and (c) among senior BSN students is there a significant difference in levels of EI and empathy related to prior HCE. Once IRB approvals were obtained from all participating universities, data was collected from all groups until all participants had completed the posttest. Anonymity of participants' data was protected as described previously throughout the study.

Chapter Four

Results

The purpose of this quasi-experimental study using pre- and posttest assessments was to determine if there is a change in levels of emotional intelligence (EI) and empathy in senior students who complete a capstone immersive clinical practice experience in the final semester of a BSN program. This chapter reported the data analysis of the study beginning with descriptive statistics of the participants followed by detailed findings of each of the research hypothesis. Descriptives and independent samples *t* tests were analyzed to compare pre- and posttest findings. Linear regression was also used to control for the variables of gender and prior health care experience (HCE). A summary of data analysis were organized using the previously stated hypotheses in chapter three.

Potential study participants included 58 senior students in a capstone clinical course in a generic BSN program in a mid-south, public university. All students were invited to participate in the study except students with an LPN license who were instructed they would be excluded from eligibility. Forty-five participants successfully completed all components of the study including the demographic survey, pretest, and posttest.

Data Cleaning

During data cleaning, one participant proved to be an outlier and was removed from the study resulting in a final sample of 44. The scatterplot displayed in Figure 2

verifies the outlier which was removed from the sample due to its distance from the mean of pretest (50.93) and posttest (19.81).

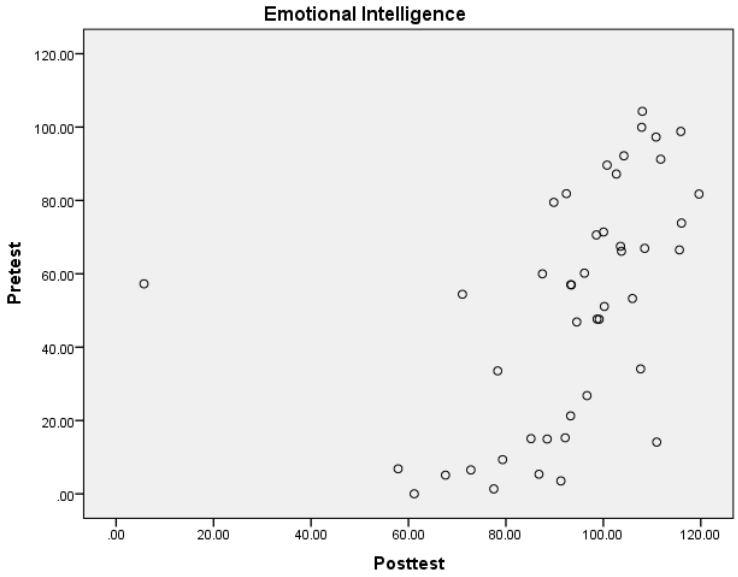

Figure 2. Sample of outliers.

Descriptives

Description of the Sample

The characteristics of the sample ($N = 44$) was primarily White, non-Hispanic female. There were 88.6% females ($n = 39$) and 11.4% males ($n = 5$). The diversity in the sample included 75% White, non-Hispanic ($n = 33$); 13.6%, African American ($n = 6$); 6.8% Hispanic ($n = 3$); and 4.5% Asian ($n = 2$). The participants' median age was 25.91 and mode of 23 years. There were 39 females and 5 males in the sample. Seventeen of the participants had no prior HCE, and 28 had prior HCE with the mean of .614 and .492 standard deviations. Sample participants' characteristics are identified in Table 1.

Table 1

Demographic Characteristics of Sample (N = 44)

	M	*SD*	*Range*
Age	25.91	5.45	23
Gender	.89	.321	1
Prior HC experience	.614	.492	1

The histogram for age is displayed in Figure 3. No limits were placed on age of participant but the mean was 25.91 with the majority of participants between 21 to 25 years.

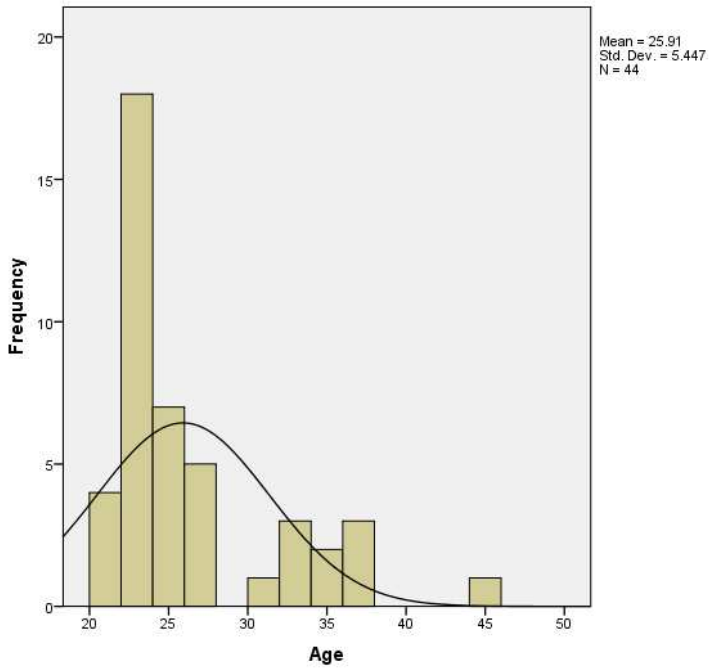

Figure 3. Age of sample.

The bar graph displayed in Figure 4 represents the gender of the sample. Gender was an independent variable in the study. The sample consisted of five males and 39 females.

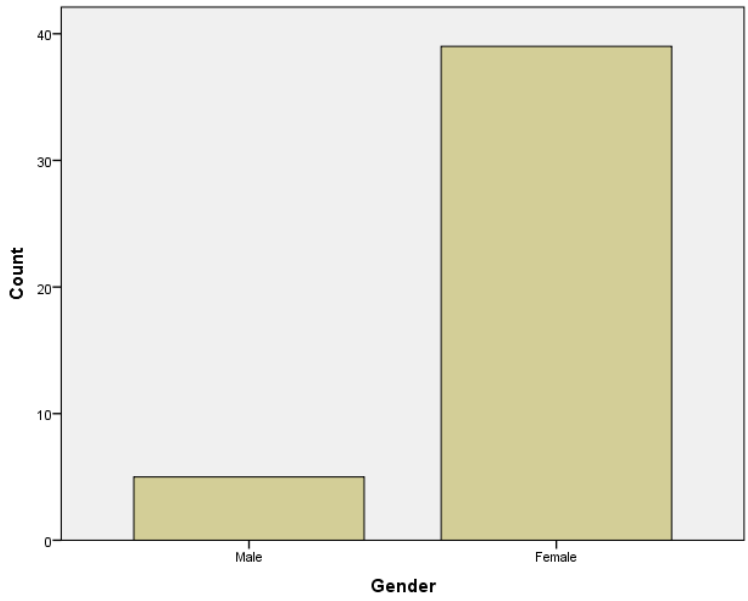

Figure 4. Gender of sample.

Prior HCE was obtained from the sample. Table 2 summarized participants with and without HCE. There were 17 participants with no prior HCE and 27 with prior HCE. Eighteen were CNAs, three paramedics, one EMT, and five patient care technician.

Table 2

Prior HCE

	Frequency	Percent	Cumulative Percent
No experience	17	38.6	38.6
Experience	27	61.4	100.0
Total	44	100.0	100.0

Response to Measurements

The dependent variables under review in this study included EI and empathy, and the independent variables were gender and prior HCE. The intervention to determine changes in the dependent variable was spending 150 hours in an experiential leaning experience with a preceptor in the clinical nursing environment. While age was not considered in the hypotheses for this study, it was not found to be significant when analyzed.

The Mayer-Salovey-Caruso Emotional Intelligence Test V2.0 (MSCEIT) tool was used to evaluate the EI and empathy among the participants. Overall EI scores and empathy scores were analyzed and compared pre and post clinical capstone experience. Pretest findings for the sample showed a mean of 50.79 with 32.55 standard deviation, and posttest showed a mean of 95.38 with 14.79 standard deviation. Empathy pretest mean was 97.71 with standard deviation of 17.10, and empathy posttest mean was 97.28 with standard deviation of 15.24. As a group described in Table 3, the participants scored much higher EI scores post experience than pre experience. Empathy scores were slightly lower on posttest than pretest.

Table 3

Results of MSCEIT Pretest Posttest

	M	*SD*	*Range*
EI Pretest	50.79	32.55	104.27
EI Posttest	95.38	14.79	61.75
Change EI	44.59	24.75	93.12
Empathy Pretest	98.71	17.10	97.08
Empathy Posttest	97.29	15.24	61.91
Change Empathy	-1.42	14.11	69.18

Reliability Testing

Conducting quantitative research to link a causal variable with outcome variables was a primary reason to conduct research in nursing education (Creswell, 2009) and it was necessary to determine if changes between the pretest and posttest were a result of the intervention or the independent variable, or due to some other factor occurring during the study period. Internal reliability was established as Cronbach alpha of $\alpha = .75$ or higher for instruments used in quantitative studies (Singh, 2007). The Cronbach alpha for this study was $\alpha = .91$ which is acceptable to confirm internal reliability.

The reliability of the MSCEIT instrument was discussed in chapter three. Study scores were compared to instrument reliability and validity scores of comparable MSCEIT studies. Overall MSCEIT's $\alpha = .79$. Many studies support the reliability of the tool including Maul's (2012) $\alpha = .85$; Austin's (2010) $\alpha = .90$; and Mayer et al.'s (2012) $\alpha = .86$.

Hypothesis Testing

Prior to answering the hypotheses, assumptions for *t* tests were met. Data for the sample ($N = 44$) were analyzed for meeting the assumptions of normality for the group. As this is one group, within-group analysis was carried out using independent samples *t* tests. In addition, linear regression was examined to determine if correlations between the variables existed.

Assumption of Normality

The independent *t* tests assumed the dependent variables and covariates were both normally distributed based on the criteria of skewness and kurtosis. The values of skewness and kurtosis fell within the range of -1.0 to 1.0 to meet the assumption of

normality. The sample's skewness value (-.357) and kurtosis value (.702) suggested EI were normally distributed and the assumption was met.

Hypothesis 1

There was a difference between scores in EI and empathy among senior nursing students before and after completing a capstone clinical practice experience in the final semester of a BSN program. Differences between repeated measures were tested using independent paired *t* tests. The dependent variables were the EI and empathy and the independent variable was the capstone immersive clinical experience. Table 4 displays the results of the statistical analysis for EI. As the table summarizes, significance was found in EI in the study when the pretest results were compared to the posttest results. The mean was -44.59 and the standard deviation was 24.75.

Table 4

Results of paired t tests for Emotional Intelligence

				95% Confidence Interval				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	*t*	*df*	Sig. (2-tailed)
Emotional Intelligence	-44.59	24.75	3.73	-52.12	-37.07	-11.95	43	.000

Significance resulted from a 95% CI and α 0.05 was a $p = .001$; thus, the data indicates the null hypotheses can be rejected. There was a difference in EI after completion of an immersive experience. Participants empathy scores were slightly lower from pretest to posttest analysis with no significance found. Results are displayed in Table 5. Independent paired *t* tests were performed with no significance found ($t = -.359$, $p = .721$). Results of the data analysis indicated the null hypothesis could not be rejected.

Table 5

Results of Paired t Tests for Empathy

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Lower	Upper	*t*	*df*	Sig. (2-tailed)
Empathy	-1.60	29.59	4.46	-0.60	7.40	-.359	43	.721

Hypothesis 2

There was a difference in scores of EI and empathy related to gender among senior nursing students who experienced a capstone clinical. Differences between repeated measures were tested using an independent samples *t* test. The dependent variables were EI and empathy, and the independent variable was the capstone immersive clinical experience with gender as a covariate. Table 6 summarizes the results of EI and gender. No significance was found between gender and EI in the sample ($t = .535$, $p = .670$). This may be due to the female positive skewness. The sample consisted of nearly eight times more females than males.

Table 6

Results of Paired t Tests for EI and Gender

	N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Lower	Upper	*t*	*df*	Sig.
Female	39	50.22	24.43	3.91	17.58	30.27	.535	42	.670
Male	5	43.87	29.48	13.19					

Table 7 summarizes empathy and gender with results of the data analysis resulting in no significance (t = .201, p = .681). This concluded the null hypothesis could not be rejected.

Table 7

Results of paired t tests for Empathy and Gender

				Std. Error	95% Confidence Interval				
	N	Mean	Std. Deviation	Mean	Lower	Upper	*t*	*Df*	Sig.
Female	39	-1.58	14.45	2.31	-12.31	-15.04	.201	42	.681
Male	5	-0.22	12.39	5.54					

Hypothesis 3

There was a difference in scores of EI and empathy among students with prior HCE. Differences between independent samples *t* test. The dependent variables were EI and empathy, and the independent variable were the capstone immersive clinical experience with prior HCE as an EMT/paramedic or CNA the covariates. Table 8 describes those with and without prior HCE and EI. Pretest of variables resulted in no significance (t = 1.74, p = .090). Prior HCE and EI posttest resulted in no significance (t = 1.94, p = .059). Table 9 shows this comparison. Results of the study show no significance in EI levels and prior HCE so the null hypothesis could not be rejected.

Table 8

Results of paired t tests for Pretest EI and Prior Health Care Experience (HCE)

	N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval		*t*	*df*	Sig. (2-tailed)
					Lower	Upper			
No Prior HCE	17	61.29	30.97	7.51	-2.76	36.99	1.74	42	.090
HCE	27	44.17	32.32	6.22					

Table 9

Results of Paired t Tests for Posttest EI and Prior Health Care Experience (HCE)

	N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval		*t*	*df*	Sig. (2-tailed)
					Lower	Upper			
No HCE	17	100.67	16.50	4.00	-.343	17.57	1.94	42	.059
Experience	27	92.05	12.82	2.47					

Empathy and prior HCE were analyzed. Table 10 describes the results. Significance was found between empathy and those with and without prior HCE. Prior HCE and empathy pretest resulted in no significance ($t = 2.35$, $p = .024$). Prior HCE and empathy posttest resulted in significance as well ($t = 2.45$, $p = .018$). Thus, the null hypothesis was rejected.

Table 10

Prior HCE and Empathy Pretest and Posttest

	Levene's Test for Equality of Variances		*t* test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Empathy Pretest	.264	.610	2.35	42	.024	20.090	8.550	2.835	37.344
Empathy Post test	2.757	.104	2.45	42	.018	21.861	8.917	3.866	39.856

Chapter Summary

This research study concentrated on EI and empathy levels in senior nursing students who completed an immersive clinical experience. Establishing a baseline for the importance in exploring the characteristics of EI and empathy was necessary in evaluating nursing students' ability to be successful when transitioning to practice and effectively caring for their patients. Independent samples *t* tests were used to analyze students' scores in the MSCEIT tool including change in total EI levels, change in empathy levels, and changes in EI and empathy based on gender, age, and prior HCE.

Hypothesis testing yielded mixed results. Hypothesis 1 demonstrated a statistically significant change in EI but no significant change in empathy. Hypothesis 2 resulted in no significant changes in EI and empathy with regards to gender. Hypothesis 3 showed no significance in EI and prior HCE but significance was obtained when empathy and those with prior HCE were compared. Linear regression statistics revealed no

correlation between EI and empathy and the dependent variables of age and gender. In addition, prior HCE negatively predicted posttest empathy even when controlling for gender and ethnicity but was not statistically significant.

Chapter Five

Discussion and Summary

As health care and nursing become ever more complex, the beginning professional nurse must be prepared to enter into practice with an awareness of emotional intelligence (EI) level and ability to empathize with the patient. Major themes of EI need to be included to prepare students for nursing practice. These themes include (a) the ability to understand the emotional aspects of nursing practice, (b) the ability to use emotional skills in providing quality and safe care, and (c) the ability to effectively use EI in dealing with the chaotic health care environment (Smith et al., 2009). Nursing education must structure its curricula to address the concept of EI and empathy. This will equip the beginning professional nurse for a successful transition into practice (Freshwater & Stickley, 2004; Horton-Deutsch & Sherwood, 2008; Smith et al., 2009; Spurr, 2007). To this end, an experiential learning opportunity to increase awareness of EI and empathy and to understand its use in the nursing profession has been implemented in the curriculum at a mid-south public University. The purpose of this quasi-experimental study using pretest-posttest assessments was to determine if there was a change in levels of EI and empathy in senior students who completed an immersive capstone clinical practice experience in the final semester of a BSN program.

The study established a base of inquiry in the field of EI and empathy within the experimental learning environment where an evaluation of the senior nursing student could be completed. Using the Mayer and Salovey's (1997) four-branch model of

emotional intelligence theoretical framework, students were able to use emotional perception and expression, emotional facilitation, emotional understanding, and emotional management to provide safe quality care to their patients. Empathy can be evaluated and improved upon by analyzing nursing students' abilities in appraising and expressing emotion in self and others (Salovery & Mayer, 1990). The four branches of the theory which were (a) emotional perception and expression; (b) emotional facilitation (using EI); (c) emotional understanding, and (d) emotional management, have improved based on the study results of significance in changes in EI levels. EI can be learned and improved with experience. Senior nursing students' EI significantly increased as a result of interactions with patients and nursing professionals in the health care environment. The ability to practice nurse-patient interactions resulted in a significant increase in senior nursing students EI levels.

Summary of Findings

The results of this study indicated statistically significance in change in pretest and posttest levels of EI. The findings supported the causal relationship between the interventions of the capstone immersive clinical experience on levels of EI. Results also demonstrated no significance in changes in levels of empathy. In fact, simple linear regression showed a negative correlation between pretest and posttest empathy levels in students with prior health care experience (HCE). Prior HCE was not significant in changes in EI, but significance was found for empathy and prior HCE. The dependent variable gender was not a predictor in the study but cannot be adequately evaluated due to the female skewness of the sample females. As established in chapter three, few studies exist regarding EI, empathy, and immersive clinical experience in nursing

education; thus, the need for this study. Many studies were found in EI and empathy in applying EI concepts and how these concepts can be used in educating and training nursing students and nurses. Evaluating EI and its changes during an immersive clinical experience in nursing school has not been studied.

Integration of Findings with Previous Literature

Emotional Intelligence

The results of this study support the notion that interactions with others, specifically members of the health care team and clients in the health care setting, significantly improves the nursing students' level of EI. It also shows decreasing levels of empathy in posttest from pretest. Using these results, a comparison between this study and the literature has been reviewed.

Health care. In this study, spending 150 hours in the immersive capstone clinical resulted in a significant change in EI scores, but not significant changes in empathy scores. These studies were congruent with the findings that immersive clinical experiences significantly increase the students' levels of EI. Comparing gender and prior HCE with EI and empathy yielded no significant results. Faguy (2012), Lewis (2011), and Meyer et al. (2004) described medical, dental, and nursing students having higher EI was critical in successfully performaning clinical skills (the hard skills or technical/procedural skills and soft skills or caring, compassion, and empathy skills) to deliver safe and competent care and to improve patient outcomes. Including EI in nursing curriculum to foster the development of EI provides nursing students the soft skills needed to effectively navigate the health care environment in which they are working and to promote effective care to the patients they serve.

Findings of the study suggest experiential capstone immersive clinical experience is a valuable tool in improving levels of EI in the student. Hammerly et al.'s (2014) survey of 5,000 health care professionals yielded results that increasing levels of EI resulted in members becoming a more effective part of the team. Meyer et al.'s (2004) study showed implementing a one day intervention to improve EI was not enough time for its development which may support the premise of having a greater amount of time for EI to develop in the individual.

Academia. This study found a significant increase in EI levels upon the completion of the capstone immersive clinical experience. This is supported by a study in which medical schools examined the use of EI in their curricula to improve interpersonal communications among physicians and their clients. Austin et al. (2007) studied EI and empathy levels, gender differences in EI levels, and EI and empathy related to academic success among medical students at different levels of study. No significance was found among the students' level of study but significance was found in EI scores among genders with females scoring higher than males. Similarly, Todres et al. (2010) completed a study investigating EI, age, gender, ethnicity, and time in medical school. No significance was found in EI scores among the group, but significance was found in the managing emotions branch which suggests implementing EI education in the later years of the program to increase EI levels, which may result in improved interpersonal interactions with clients.

This study yielded significant findings in EI at the completion of the capstone immersive clinical experience. Imran et al. (2013) completed an exploratory study in medical students to evaluate EI at year one and year five in the program of study. No

intervention was instituted. Investigators were evaluating changes in EI from maturation in the program. Significance was found on branches of appraisal of emotional and regulation of emotions. It was concluded that incorporating EI education increases emotional competency and communication skills with patients; thus, increasing patient satisfaction. The current study only evaluated the senior students, so comparisons cannot be made between the studies. Fletcher et al. (2009) studied medical students who competed extensive instruction on EI during their program of study. Significance between the groups in the posttest were achieved.

The result of this study with the immersive clinical experiences of the participants as the intervention was unique in its design. Each participant had in individualized experience, and as a group the changes in EI were significant. Lewis (2010) studied OT and PT students at the graduate and undergraduate levels. Results showed significant results between EI scores and clinical performance as well as other indicators including pre-requisite GPA, GRE, age, school, and gender. This may have been due to the homogeneity of the group as they were accepted students in their respective programs.

In a study done to evaluate EI levels and fieldwork in OT and PT students, Andonian (2013) discovered students scored higher on the understanding emotions branch of MSCEIT as well as managing emotions with increasing time in the field. This compares positively with nursing students' increased time in clinical leading to increased EI scores. Larin et al. (2011) studied PT and nursing students in graduate and undergraduate programs and evaluated EI prior to and at the completion of clinical experiences. Significance was noted in groups using PBL but not in conventional education methods of teaching. This supports this study's finding that using methods

other than conventional teaching methods such as PBL and experiential learning in an capstone immersive clinical experience increases EI scores.

Nursing profession. In this study, the students completed the experiential immersive clinical course with significantly improved posttest EI scores. Perceiving and understanding emotion is a core nursing skill (Freshwater, 2004; Freshwater & Stickley, 2004; McQueen, 2004; Smith et al., 2009). This skill is included in MSCEIT branches of EI. Evaluating and improving EI and empathy competencies among nursing students especially senior students will promote more effective nurse-patient relationships. EI and empathy are critical to the success of the student as they transition into the beginning professional nurse role. Emotional considerations are a critical component of clinical decisions, and development of EI and empathy tools to improve safety and care in nursing is key. Development of EI and empathy will lead to correct decision making in patient care and is essential for positive patient outcomes (Evans & Allen, 2002; Freshwater & Stickley, 2004; Gooch, 2006; Smith et al., 2009). Harper and Jones-Schenk (2012) studied staff nurses and EI. A survey was conducted which showed nurses possess levels of EI from below average to above average.

Emotional intelligence, age, and gender. This study confirmed findings that no significance was seen among genders with the limitation that the majority of the students were female. Although no significance was found, females did have higher EI and empathy scores than the males. This finding is consistent with multiple studies that found female and older participants score higher on EI (Carrothers et al., 2000; Ciarrochi et al., 2000; Mayer et al., 1999; Mayer et al., 2002; Palmer et al., 2005; Van Rooy et al., 2005). Females in a medical school in Pakistan had higher EI levels than males but findings

were not significant (Imran et al., 2013).

The majority of the participants in this study were under age 25 and significance was found in EI scores. Todres et al.'s (2010) study resulted in students under age 25 scoring significantly lower on the MSCEIT branches understanding and managing emotions. The difference may be due to many factors from the difference in characteristics between medical and nursing school students, to geographical location as this study took place in the mid-south in the United States and the Todres et al. (2010) study was conducted in the United Kingdom.

Empathy

This study did not show significance between empathy and gender, but females scored higher on the empathy subscales when compared to males in nursing school. It has been found that females are more empathetic than males regardless of the profession (Arora et al., 2010; Austin et al., 2007; Imran et al., 2013; McKenna et al., 2012). In an Austin et al. (2007) study, results showed significant gender differences on empathy with females scoring higher than males in medical school.

This current study supports this finding in that there was a negative correlation between empathy levels of students with prior HCE. Ward et al. (2012) studied empathy in nursing students. Their study concluded students were less empathetic than expected and resulted in statistical significance in the decline in empathy levels as they increased patient interactions. This has been confirmed in other studies as well (Ozcan et al., 2010; Ward et al., 2009).

Health care. This study's results showed a very slight increase in empathy levels and a negative correlation between empathy and prior HCE. Yarascavitch et al. (2009)

concluded students in medicine, dentistry, and nursing have declining levels of empathy with known tools that measure empathy, but when using a new tool they have developed new findings. The authors also concluded that empathy could be taught.

Nursing profession. This study supports the claim that nurses and nursing students are lacking in caring, compassion, and empathy, and these soft skills need to be taught in nursing curricula. Van der Cingel (2014) studied nurses in geriatric care and surmised the more empathetic the nurses were, the higher the quality of care but that they were lacking in the areas of caring, compassion, and empathy.

Nursing education. In this study, students' posttest empathy scores were just slightly higher than the pretest scores with no significance found. Prior HCE was a negative predictor of empathy scores. It has been hypothesized that nursing students' levels of empathy have dramatically declined compared to students in the past (Ozcan et al., 2010; Ward et al., 2012). A longitudinal study among 214 undergraduate nursing students resulted in a statistically significant decline in empathy in the sample (Ward et al., 2012). Lovan and Wilson (2012) studied nursing students' levels of empathy with results significant in that levels of empathy which did not increase during nursing school and concluded there was a need to incorporate empathy in the curriculum. Cinar et al. (2007) also studied building empathy in nursing students and found a statistically meaningful relationship in empathy between educational levels; the authors suggested implementing empathy education in nursing curricula.

This study's results of no significance in pretest to posttest empathy scores with no significance are contrary to the Sheehan et al. (2013) study. They found empathy in nursing students over time statistically reliable between pre-course and post-course

empathy scores but the baseline scores were quite high. More studies are needed in this area to support one of these findings.

Experiential Learning

Nursing education. In this study participants spent 150 hours in the experiential learning environment. They worked in dyads to provide holistic care for their assigned clients. Results showed significant change in EI upon completion of the experience. This supports the findings in a Cherry et al. (2012) study which described the benefits of providing the use of EI and empathy in the final year or semester of instruction and education. They also recommended having experiences over a short period of time instead of longer time period (Cherry et al., 2012).

Implications of the Findings

The significance of these finding offers implications for the preparation of clinical nursing faculty at all levels of nursing education. The study results have implications relevant to nursing education, practice, and research. The findings of this study may help to advance nursing education and to prepare a more empowered nursing faculty and future nursing workforce.

Nursing Education

This study provided several implications for nursing education for both faculty and administrators. In an effort to bridge the theory practice gap, BSN programs have added an immersive capstone clinical course during the final semester of the senior year (a) to provide an improved preparation of graduates as they become novice nurses; (b) to expose students to the reality of nursing with its complexity of technical and interpersonal skills needed to provide safe, competent care; (c) to provide exposure to the

current health care environment to be prepared to meet expectations; and (d) to increase the level of preparedness nursing students possess to provide competent care as they enter their chosen profession (Spurr, 2007). Ward et al. (2012) and Ozcan et al. (2010) both found levels of empathy declined over the course of the nursing program, respectively; thus, supporting the need to incorporate empathy education in nursing curricula.

Immersive capstone clinical. In designing the capstone experience, consideration must be made related to length of time and placement in the curriculum. In this study, students spent 150 hours in the immersive capstone clinical in a period of six weeks resulting in statistically significant changes in EI levels but no significance in empathy levels. These findings support the need for a capstone immersive clinical experience in the senior generic BSN program. Nursing faculty and administrators need to explore how to include this type of experience in the curricula. Cherry et al. (2012) described the benefits of providing the use of EI and empathy in the final year or semester of instruction and education. They also recommended having experiences over a short period of time instead of longer time periods (Cherry et al., 2012), although a time frame was not defined.

Results of these findings confirmed the importance of experiential learning experiences in the clinical setting to better prepare students for transitioning into nursing practice. Findings also confirmed prior studies which showed a negative prediction of HCE and empathy. Nursing students need instruction on interpersonal relationships in an effort to increase their empathy and strategies to avoid apathy as the student nurse progresses in the program and enters into practice.

This study's results showed the need to include the soft skills of caring, compassion, and empathy in nursing curricula and the importance of continued education in immersing students in the environment in which they will be practicing. To that end, the value of including a capstone immersive clinical experience with substantial hours (in this case 150 hours) was confirmed. Results of statistically significant findings in the change in EI scores and the nonsignificant findings in change in empathy scores identified where gaps in educational preparation lie. Continuing and increasing immersive capstone hours and formal education in the areas of EI and empathy will benefit the senior BSN student.

Nursing Practice

The majority of novice nurses, most of whom are also in the millennial generation, begin practice in an acute care setting (Olson, 2009). For this reason, students are placed in hospital settings for the capstone immersive clinical experience. Studying how EI and empathy correlate to nursing students' experiences in a capstone clinical course will assist nursing educators in gaining an understanding of the importance of direct patient interaction on these concepts to better equip students as they begin professional practice. Emotions and empathy as demonstrated in EI (Mayer et al., 1999) play a significant role in nurses' ability to successfully provide safe competent care (Rochester, Kilstoff, & Scott, 2005; Schutte et al., 2001). BSN students who spend quality time interacting in the environment in which they will practice is essential in developing EI and empathy abilities. This will ultimately produce nurses who provide safe competent care to their patients and who are effective in their role within the health care team.

Nursing Research

This study of EI in nursing has just begun, especially in nursing practice and nursing education. In nursing, there is little empirical data determining which nursing competencies are most important in producing nurse graduates to effectively and safety care for their patients. This study identified a significant increase in EI after a 150 hours immersive experience but no significance in the increase in empathy at the senior level. Further study is needed to better determine the length of the experience that would be adequate to demonstrate a significant increase in EI. The study also confirmed the placement of the study of EI and empathy at the senior level is appropriate. Senior students have greatest opportunity for growth of EI and empathy when adequate time is spent in an immersive capstone clinical environment. Assessing these variables earlier in the program may diminish the effectiveness of the study with exception of a longitudinal study comparing EI and empathy prior to the students' first clinical experience and after the completion of the final clinical experience. This study has added valuable knowledge of evaluating EI and empathy in the capstone immersive clinical experience of senior nursing students.

Public Policy

The Institute of Medicine's 2010 report brief, *The Future of Nursing: Focus on Education* has recommended nursing education revise their programs to provide improved transition to practice. This is in attempt to bridge the theory to practice gap that continues to present as novice nurses enter into practice (Benner et al., 2010; Duchscher, 2009; Freshwater & Stickley, 2004). With improving student preparedness through the immersive capstone clinical course nursing students will acquire the technical as well as

the interpersonal skills needed to make their transition a successful one. Settings or sites for the capstone clinical may be in acute care as this is where the majority of students begin their professional career. This study supports the Institute of Medicine's (2010) report on improving student readiness to enter into practice by evaluating levels of EI and empathy. The results of this study showed the capstone immersive clinical experience provided educational opportunity to have statistically significant changes in EI but not in empathy levels. These results may assist nursing educators in evaluation of current student levels of EI and empathy and exposes areas for improvement.

Limitations

Prior to conducting this study, internal and external threats were identified and attempted to be controlled. Despite best efforts in maintaining rigor in this research, limitations exist. Actual threats to internal and external validity were examined to confirm the study findings.

Threats to Internal Validity

The convenience sample presented a limitation to the study and the inability to control for extraneous factors of the participants and the nature of the intervention; thus, posing a threat to internal validity. Those extraneous factors included influences that have may affected the outcome and may have provided an alternative explanation for the study results (Creswell, 2009). Internal validity is tested by ruling out extraneous factors. If the results of the study can be generalized to the population then it possesses good external validity. A limitation to this study regarding internal validity was due to the fact that the study was conducted at one university on a single campus. Results may not apply to schools of nursing of different sizes and in different geographical areas which limit the

ability to generalize the study findings. Internal validity may have also been limited due to the majority of the participants being female. Females were the majority in the nursing profession but this study did not accurately represent the percentage of males in the field, so no conclusions can be drawn from the results of this study.

The testing threat was controlled for by using the MCEIT which relied on honesty of the test taker. There was a minimum of six weeks between pre- and posttests; this significantly limited the threat to testing. The internal validity threat of history was controlled for using repeated surveys. Participants had a minimum of six weeks between pretest and posttest, and results confirmed the threat of history was controlled. The maturation threat was minimized by using repeated surveys. Instrumentation threat was controlled for in that the MCEIT was one of the most objective EI tools with established and confirmed reliability and validity. Statistical regression was controlled for by using an online MSCEIT tool and included all data which controlled this threat. The attrition was diminished as a threat by supplying a small monetary incentive offered at the completion of the survey.

Threats to External Validity

Threats to external validity included population threat related to the ability to generalize the findings to the general population of generic BSN students. The limitation of generalizability was under threat due to the sample size for this study. While the power analysis calculation determined a sample size of 45 (see Appendix F), a final sample size of 44 ($N = 44$) was obtained, which was found to validate the results. This was acceptable for this study with a small power but significant results were obtained which lends itself to generalizability within the specific group in this specific area. The ecological threat

was being able to generalize the results of the study to the students in the respective programs. This study does not have the ability to be generalized to all populations in this class which leads to persistence of the ecological threat.

Recommendations for Future Research

Recommendations for future study are many as this study is groundbreaking in its scope. As nursing education at the baccalaureate level continues attempts to advance and stay current in the ever-changing health care environment, the value of a capstone immersive clinical experience in the senior year has been confirmed. Best teaching practices in incorporating instruction in the soft science of nursing including caring, compassion, empathy, and EI competency need to be added to nursing curricula. Evaluating student learning outcomes within the capstone immersive clinical experience with the incorporation of instruction in the soft science of nursing and EI will assist educators in effectively preparing students as they transition into practice. Nursing curricula need to address the issues of lack of content in the areas of caring, compassion, empathy, and EI. Studies evaluating the effectiveness of these improvements will add to the body of knowledge in these areas of nursing which has been eliminated over time.

Studies evaluating EI and empathy in the multiple generations of nursing students will continue to be an area of need. Millennials are in the majority of current nursing programs but in a few short years the next generation will be entering. Nurse educators need to be aware of this change and anticipate how EI and empathy can be effectively added to the body of knowledge.

Empathy among senior students also needs further study. Empathy education needs to be implemented throughout nursing education as a result of the negative

correlation in the study with research to evaluate effectiveness. Improving empathy levels prior to client exposure and continuing reinforcement of the importance of being empathetic need to be considered. Additional study in the area of prior HCE and empathy also need to be conducted to determine if more time spent in the health care setting negatively affects empathy.

Another area in need of further study is the relationship of gender, ethnicity, and age. EI and empathy levels need to be explored among these dependent variables. Accurately representing the percentages of males and females in the nursing profession in future studies will give researchers a better understanding of differences in EI, empathy, and gender. Few studies exist in these areas in nursing education and the nursing profession.

Chapter Summary

EI and empathy along with caring and compassion need to be recognized as important concepts in nursing education. Nursing curricula must address this need and review their programs to incorporate these components of the soft skills of nursing. Threading these concepts through the BSN curriculum and using appropriate evaluation tools to attain the effectiveness of the learning process will serve nursing well as students' transition into professional nursing practice. As the diversity of nursing students continues to evolve in regards to age, gender, and ethnicity, nursing education must acknowledge this diversity and work to ensure educational opportunities to meet their needs. This includes implementing EI and empathy in educational activities and evaluation of their effectiveness.

Continued research needs to be undertaken to evaluate EI and empathy in the nursing student upon entering the BSN program as well as when they complete the program. Program learning outcomes need to be aligned to evaluate students' abilities to positively impact the nursing profession and the community in which they serve. Efforts are ongoing to revise outdated curricula to meet these needs.

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Appendix A
Institutional Review Boards 'Approvals

NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board

MEMORANDUM

To: **Michelle L Finch, MSN**
College of Nursing

From: **Jo Ann Kleier, Ph.D., Ed.D.,**
Center Representative, Institutional Review Board

Date: **December 14, 2015**

Re: **IRB #: 2015-149; Title, "Emotional Intelligence and Empathy of Nursing Students in an Immersive Capstone Clinical Course"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt Category 2)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Jo Ann Kleier, Ph.D., Ed.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: **Lynne Bryant, EdD**

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129

EXEMPT APPROVAL NOTICE

1/13/2016

Investigator(s): Michelle Finch
Department: Nursing
Investigator(s) Email: michelle.finch@mtsu.edu
Protocol Title: "Emotional Intelligence and Empathy of Nursing Students in an Immersive Capstone Clinical Course"
Protocol ID: 16-1132

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above and this study has been designated to be EXEMPT.. The exemption is pursuant to 45 CFR 46.101(b) **(2) Educational Tests, Surveys, Interviews, or Observations**

The following changes to this protocol must be reported prior to implementation:

- Addition of new subject population or exclusion of currently approved demographics
- Addition/removal of investigators
- Addition of new procedures
- Other changes that may make this study to be no longer be considered exempt

The following changes do not have to be reported:

- Editorial/administrative revisions to the consent of other study documents
- Changes to the number of subjects from the original proposal

All research materials must be retained by the PI or the faculty advisor (if the PI is a student) for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

NOTE: All necessary forms can be obtained from www.mtsu.edu/irb.

Appendix B
Letter of Support From Program Director

School of Nursing
MTSU Box 81
1301 East Main Street
(615) 898-2437

MIDDLE TENNESSEE

December 9, 2015

Institutional Review Board
Nova Southeastern University

To Whom It May Concern:

The purpose of this correspondence is to offer full support for the use of the senior nursing students engaged in the Capstone Clinical Course in the BSN program at Middle Tennessee State University as test subjects for the dissertation research being conducted by Michelle Finch.

If you have further questions, please feel free to contact me at 615-904-8488 or via email at jsauls@mtsu.edu.

Sincerely,

Jenny Sauls

Jenny Sauls, RN, MSN, PhD, CNE
Professor and Director

Appendix C
Student Letter of Participation

School of Nursing
MTSU Box 81
1301 East Main Street
(615) 898-2437

Title of Study: Emotional Intelligence and Empathy of Nursing Students in an Immersive Capstone Clinical Course

Principal investigator(s)
Michelle Finch, PhD(c), MSN, RN, CPN
2723 Dora Elizabeth Ct.
Murfreesboro, TN 37129
615-809-4962

Co-investigator(s)
Lynne Bryant, EdD, MSN, RN, CNE
Nova Southeastern University
3200 South University Drive
Fort Lauderdale, FL 33328
954-262-1797

Institutional Review Board
Nova Southeastern University
Office of Grants and Contracts
(954) 262-5369/Toll Free: 866-499-0790
IRB@nsu.nova.edu

Site Information
Middle Tennessee State University
1301 E Main St. Murfreesboro, TN 37132

Description of Study: Michelle Finch is a doctoral student at Nova Southeastern University engaged in research for the purpose of satisfying a requirement for a Doctor of Philosophy in Nursing degree. The purpose of this study is determine if there is a change in levels of Emotional Intelligence and empathy in senior students who complete an immersive capstone clinical practice experience in the final semester of a generic baccalaureate nursing program. The goal of the study is to obtain baseline emotional intelligence and empathy levels of current senior students in final semester of a generic baccalaureate program to better understand priority nursing program curricular revision to address students need to be more emotionally intelligent and empathetic.

If you agree to participate, you will be asked to complete an online survey. This survey will assist the researchers to identify levels of emotional intelligence and empathy in the senior nursing student. This data will also be used to establish a baseline database for future studies. The questionnaire will take approximately 45 minutes to complete.

Risks/Benefits to the Participant: There may be minimal risk involved in participating in this study. There are no direct benefits to for agreeing to be in this study. Please understand that although you may not benefit directly from participation in this study, you have the opportunity to enhance knowledge necessary to continue research related to nursing students emotional intelligence and empathy abilities. If you have any concerns about the risks/benefits of participating in this study, you can contact the investigators

and/or the university's human research oversight board (the Institutional Review Board or IRB) at the numbers listed above.

School of Nursing
MTSU Box 81
1301 East Main Street
(615) 898-2437

Cost and Payments to the Participant: There is no cost for participation in this study. Upon agreeing to participate, you will receive a $10 gift card to a beverage company.

Confidentiality: Information obtained in this study is strictly confidential unless disclosure is required by law. All data will be secured in a password protected computer in a locked room. Your name will not be used in the reporting of information in publications or conference presentations.

Participant's Right to Withdraw from the Study: You have the right to refuse to participate in this study and the right to withdraw from the study at any time without penalty.

I have read this letter and I fully understand the contents of this document and voluntarily consent to participate. All of my questions concerning this research have been answered. If I have any questions in the future about this study they will be answered by the investigator listed above or his/her staff.

I understand that the completion of this questionnaire implies my consent to participate in this study.

Appendix D
Demographic Questionnaire Research Participants

Name_____ (Your name will not be used in any public files. All public research reports will use pseudonyms. Once test results are entered into the database all names will be removed.)

1. What is your age? _____ years
2. What is your gender?
    1. Female
    2. Male
3. What is your race/ethnicity? (Select all that apply)
    1. African American or Black
    2. American Indian or Alaska Native
    3. Asian
    4. Hispanic/Latino
    5. Native Hawaiian or Other Pacific Islander
    6. White, non-Hispanic
    7. Other_____
4. Do you have prior healthcare experience?
    1. No
    2. Yes. If yes, in what role?
        1. CNA
        2. EMT
        3. LPN
        4. Paramedic
        5. Other_____

Appendix E
Research Hypotheses Power Analysis

***t* tests -** Means: Difference from constant (one sample case)
Analysis: A priori: Compute required sample size

Input: Tail(s)	= One
Effect size *d*	= 0.5
α err prob	= 0.05
Power (1-β err prob)	= 0.95
Output:	
Noncentrality parameter δ	= 3.3541020
Critical t	= 1.6802300
Df	= 44
Total sample size	= 45
Actual power	= 0.9512400