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# Testing the Reliability and Validity of Tools Based on the Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence with Psychiatric-Mental Health Nurses

Traci T. Sims

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TESTING THE RELIABILITY AND VALIDITY OF TOOLS BASED ON THE  
MAYER-SALOVEY-CARUSO FOUR-BRANCH ABILITY MODEL OF  
EMOTIONAL INTELLIGENCE WITH PSYCHIATRIC-MENTAL HEALTH NURSES

By

Traci T. Sims

A Dissertation Submitted in Partial Fulfillment

of Requirements for the Degree of

Doctor of Nursing Science

WellStar School of Nursing

College of Health and Human Services

Kennesaw State University

December 2015

# TESTING THE RELIABILITY

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## TESTING THE RELIABILITY

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I also want to thank my “Small Group” who listened for years to the challenges I faced obtaining my doctorate. They patiently prayed for me throughout the years to “press on” and finish this part of the race.

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### DEDICATION

I dedicate this dissertation to my husband, David (Dave) B. Sims, who patiently listened and endlessly talked with me about the value of emotional intelligence (EI). Dave “gets it” that EI is an important concept that involves being aware of one’s own EI strengths and challenges that can help one live a higher quality of life. Dave constantly encouraged me to keep learning and processing how to understand the practicality of EI. Dave pulled up the “slack” in the household chores and made sure the necessities of life were addressed in our home and family. His words constantly rang in my ears, “Get it done”.

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### ABSTRACT

#### TESTING THE RELIABILITY AND VALIDITY OF TOOLS BASED ON THE MAYER-SALOVEY-CARUSO FOUR-BRANCH ABILITY MODEL OF

#### EMOTIONAL INTELLIGENCE WITH PSYCHIATRIC-MENTAL HEALTH NURSES

A lack of emotional skills may affect a nurse's personal well-being and have negative effects on patient outcomes, particularly for patients with psychiatric-mental health conditions. Raising awareness of emotional intelligence (EI) among psychiatric/mental health nurses (PMHN) is therefore important. EI is a growing field in both nursing practice and nursing education but instruments to measure EI are costly or have not been validated for use with PMHN. The purpose of this descriptive correlational study was to measure the EI level of PMHN and to evaluate the internal consistency reliability and validity of two EI instruments. The study compared the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS) with a sample of 131 PMHN from three psychiatric nurses' organizations. Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI were used to guide the research. PMHN in the study had a higher mean EI compared to that of 5000 participants in the normed MSCEIT sample. Both the MSCEIT and SREIS demonstrated moderate to high levels of internal consistency reliability. Significant weak correlations were seen between the perceiving and understanding emotion branches of the MSCEIT and SREIS, but more research is needed to understand concurrent validity between the MSCEIT and SREIS. Because EI is

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defined and measured as a set of abilities or skills by the Four-Branch Ability Model of EI, the focus on EI skills and strategies through self-awareness can be an effective way to approach helping PMHN improve their emotional skills

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Testing the Reliability and Validity of Tools based on the Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence with Psychiatric Mental Health Nurses

## CHAPTER ONE

The term emotional intelligence (EI) made the *Times* front cover in 1995 with the statement that “emotional intelligence may be the best predictor of success in life, redefining what it means to be smart” (Gibbs, 1995). Although emotional intelligence (EI) had appeared in the literature since the 1960’s, the first published definition was in 1990 crafted by two psychologists, Peter Salovey and Jack Mayer, and later in 1997 updated as an ability to perceive emotion, access and generate feelings when they facilitate thought, understand and regulate emotions (Mayer & Salovey, 1997).

In 2000 Mayer and Salovey with David Caruso, another psychologist, presented a scale to measure EI, the Multifactor Emotional Intelligence Scale (MEIS), based on a decade of theoretical and empirical work (Mayer, Caruso, & Salovey). The Mayer-Salovey-Caruso Emotional Intelligence Test, version II (MSCEIT) was based on the MEIS and is the current Four-Branch Ability Model of EI test. Because of a lack of valid self-report EI measures, Brackett, Rivers, Shiffman, Lerner, & Salovey (2006) developed the Self-Rated Emotional Intelligence Scale based on the Four-Branch Ability Model of EI.

The essence of nursing is protecting, promoting, and optimizing patient health (American Nurses Association, 2010a), which requires nurses to demonstrate practical skills as well as emotional skills (Freshwater & Stickley, 2004). A lack of emotional skills in nurses affects their personal well-being and has the potential to negatively affect patient outcomes (Codier, Muneno, & Frietas, 2011; McQueen, 2004). Psychiatric-mental health nurses (PMHN) recognize the need for effective emotional skills to work with patients who may be struggling with alterations in mood and cognition (Cleary, Horsfall, Deacon, & Jackson, 2011; Warelow & Edward, 2007). PMHN, of all groups of nurses, would be an excellent population for assessment of emotional intelligence. In fact Hildegard Peplau's theory of Interpersonal Relations in Nursing (1952) has been the foundation of psychiatric-mental health nursing education. Peplau (1952) believed that the central task of nursing education was to aid the fullest development of the nurse as a person, which directly affected the patient through the therapeutic relationship.

The therapeutic relationship has long been recognized as the core in psychiatric-mental health nursing (Perraud et al., 2006; Welch, 2005) and is essential to the promotion of positive patient outcomes (Norcross & Wampold, 2011). The Four-Branch Ability Model of EI highlights the components of EI, both emotions and thoughts, which are essential for building therapeutic relationships with patients, and it coincidentally builds on Peplau's nursing theory. Having knowledge of the EI of psychiatric-mental health nurses could both demonstrate a measure of the extent to which the nurses practice with EI, as well as serve as a measure of comparison for the MSCEIT, which has been normed on a sample of 5000 non-nurse respondents.

Psychiatric-mental health nursing could benefit from reliable, valid, accessible, affordable, and feasible tools to measure EI and to identify the personal strengths and challenges of PMHN. The MSCEIT, however, is an expensive test and has mixed findings regarding its reliability (Austin, 2010). The SREIS is a self-report measure based on the Four-Branch Ability Model of EI that is free and thus could be a cost-effective alternative to the MSCEIT (Brackett et al., 2006) were it found to be a valid and reliable measure of EI. Having knowledge of the degree to which the two tools demonstrate convergent validity could contribute to greater understanding of EI and its relationship to therapeutic, self-aware psychiatric-mental health nursing practice.

### **Purpose of Study**

The purpose of this descriptive correlational study was to compare the MSCEIT EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the Self-Rated Emotional Intelligence Scale (SREIS) scores (total and branch). Convergent validity (Trochim, 2001) examines the degree to which the MSCEIT and the SREIS are similar since they operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI. If the MSCEIT and SREIS correlate, then the SREIS may be a potential cost-effective and accessible tool to measure EI as an alternative to the MSCEIT.

PMHN who are members of the American Psychiatric Nurses Association (APNA), the International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG) were given the opportunity to participate in the study. As participant organizations these associations sent the links of this study to PMHN they knew who would like to participate. Volunteer PMHN participants were asked to answer online self-awareness questions about EI skills using the SREIS (See Appendix A), provide demographic information (age, gender, race, country of residence, education level, type of nursing license, years worked as a psychiatric nurse, and years worked at the present primary psychiatric mental health facility, retired or currently not working at a psychiatric setting), and take the online MSCEIT. A two-tailed t-test was used to compare the mean of the PHMN's MSCEIT total score to the mean of the normed sample of Mayer, Salovey, and Caruso (2002). The total and branch scores of the SREIS and MSCEIT were compared to determine if there was convergent validity between the two EI tests.

### **Significance of the Study**

For nurses to develop therapeutic relationships with their patients, Peplau (1952) emphasized the importance of self-awareness. She further described a method to move through three stages of the therapeutic relationship effectively: orientation, working, and termination. Mayor, Salovey, and Caruso's Four-Branch Ability Model of EI builds on the importance of self-awareness advocating for the additional skills of perceiving, using, understanding, and managing emotions in order to have effective therapeutic relationships. This study addressed five specific areas of significance: (1) emotional intelligence and psychiatric-mental health nurses (PMHN) as the target population for

this study; (2) the need for reliable and valid emotional intelligence tools; (3) emotional intelligence and the nursing shortage; (4) emotional intelligence and nursing (practice, education, and research); and (5) emotional intelligence and healthcare.

### **Emotional intelligence and psychiatric-mental health nurses (PMHN).**

The nursing profession combines the art and science of nursing by caring for the needs of human beings from a holistic perspective using a context of a personal relationship that is caring and culturally sensitive (ANA, 2010b). In the *Scopes and Standards of Practice*, the American Psychiatric Nurses Association [APNA] (2014), American Nurses Association (ANA) and the International Society of Psychiatric-Mental Health Nurses (ISPN) state that psychiatric-mental health nursing “employs a purposeful use of self as its art” (p. 19). The organizations further state that the work of psychiatric mental-health nurses (PMHN) “accomplished through the nurse-client relationship, therapeutic interventions skills, and professional attributes ...include...self-awareness” (p. 27). The skill of self-awareness is integral to the Four-Branch Ability Model of EI and, in addition to the MSCEIT, is important in measuring EI using tools such as the Self-Rated Emotional Intelligence Scale (SREIS). Psychiatric-mental health nursing education emphasizes the development of effective communication and self-awareness skills (Forchuk & Boyd, 2015) having a basis within Hildegard Peplau’s theory of Interpersonal Relations (Peplau, 1997). The Four-Branch Ability Model of EI emphasizes the importance of perceiving, using, understanding, and managing emotions, which could guide PMHN’s performance in specific situations and to build effective therapeutic relationships. Nurse educators in Australia, Norway, and the United Kingdom (Akerjordet & Severinsson, 2004; Hurley, 2008; Hurley & Rankin, 2008; Warelow &

Edward, 2007) advocate for EI skills to be taught to PMHN to enhance nursing performance and improve patient outcomes, but little is known in the United States about EI and psychiatric-mental health nurses' education. Having a reliable, valid, accessible, affordable, and feasible EI measurement tool could help PMHN to understand their own EI level and become more intentional in strategizing effective ways for improvement in the nurse-patient therapeutic relationship.

PMHN have been educated to use self-awareness skills to relate more effectively with patients (Forchuk & Boyd, 2015). In order to accurately assess and provide pertinent interventions with patients who have complex biopsychosocial concerns, PMHN face the challenges of not only demonstrating expertise in nursing practice but also in emotional skills (Forchuk & Boyd, 2015). PMHN must be both skilled in practice skills as well as emotionally regulated empathic people who therapeutically relate to their patients (Hurley, 2008). The Four-Branch Ability Model of EI emphasizes how nurses may become more aware of their own strengths and challenges that impact emotional health. This study highlighted an EI ability model that could guide PMHN's understanding of a systematic approach to enhance their development of emotional skills. Having self-awareness is a necessary component for PMHN to establish and maintain therapeutic relationships with patients (Forchuk & Boyd, 2015). Self-awareness is "the process of understanding one's own beliefs, thoughts, motivations, biases, and limitations and recognizing how they affect others" (Forchuk & Boyd, 2015, p. 104). Peplau (1997) agreed, stating, "by observing and analyzing their own behaviors, nurses become more fully aware of the needs, interests, and messages they communicate to their patients" (p. 162). Psychiatric-mental health patients can exhibit challenging behaviors because of the

disorders they experience like depression, anxiety, and psychosis, which can add emotional stress for mental health nurses (van Dusseldorp, van Meijel, & Derksen, 2010). Psychiatric-mental health patients face unique stressors including feeling isolated due to mental illness, stigma, and guilt, and manifest intermittent periods of changeable symptoms, which require additional expertise for PMHN to exhibit to work effectively (Warelow & Edward, 2007). To assist in psychiatric-mental health patients' biopsychosocial health promotion, PMHN's behaviors include demonstrating personal authenticity and professional integrity when interacting with others, valuing relationships as the foundation of change, and developing and maintaining trust (Cleary et al., 2011). Codier (2010) described qualities similar to emotional intelligence (EI), which included "self-awareness, self-management, social awareness and social/relationship management" (p. 942). Cleary et al. (2011) noted a growing interest in EI in PMHN because of the close association of effective nursing leadership and EI. PMHN need more than the traditional nursing skills of care and caring, but the additional expertise of EI and resilience to assist their patients to change negative experiences into positive, self-enhancing ones (Warelow & Edward, 2007). Therapeutic relationships with psychiatric patients require PMHN to have expertise in communication and self-awareness skills. Having reliable and valid EI tools could guide PMHN to consider the value of the ability model of EI to enhance personal awareness of their strengths and challenges in their own communication skills. If PMHN can model EI to their patients through their relationships, the patients may see the importance of using emotions to help them relate to others in a healthier way and improve the quality of their relationships.



As a psychiatric mental health advanced practice nurse, I have experienced the value of therapeutic communication skills when incorporating the nursing process and maintaining a professional relationship with my patients. My generalist and advanced nursing education included therapeutic communication skill techniques but did not emphasize specific EI skills (how to perceive, use, understand, and manage emotions). The Four-Branch Ability Model of EI theoretical framework brings a deeper understanding of the importance of perceiving, using, understanding, and managing my own emotions when I am communicating with my patients and participating in the healthcare interdisciplinary team. Taking the MSCEIT and reviewing the feedback gave me information that has enhanced my therapeutic communication skills. I scored high in the overall score of the MSCEIT indicating that I am aware of emotions in myself and in others, and my perception and understanding of emotion is extremely accurate. The feedback stated:

If you are able to get a little more data on how people are really feeling, and if you can stay open to these feelings (be they positive or negative), you can become even more effective in your relationships with others. (MSCEIT Feedback, personal communication, July 12, 2012)

Knowledge from this study could help other PMHN become aware of effective tools to assist them in building therapeutic relationships with their patients as it did for me.

One aspect of the MSCEIT feedback that was particularly helpful to me was the Positive–Negative Bias Score. I scored 120, which is higher than one standard deviation from the mean (Mayer et al., 2002). I may have a tendency to assign more positive emotions to stimuli, which could cause me to not have an accurate response in situations.

I was surprised when I read this because I could think of times I may not have given students realistic feedback because I was being overly positive “encouraging” them to accomplish unrealistic goals. I realized that being overly positive could cause me to misinterpret data, which could also occur in my counseling practice. Either as a psychiatric nurse educator or counselor, being overly positive could cause me to be a less effective nurse. Therefore, I realize that knowledge from this study could identify and validate EI tools to help PMHN become more aware of their positive-negative bias and how it affects relationships. PMHN need to be aware of how their positive or negative outlook can cause them to misinterpret situations and in both cases, adversely affect future outcomes for psychiatric patients. Psychiatric patients need realistic feedback that is authentic and honest to guide their development of effective coping skills.

#### ***Education and PMHN.***

While the benefits of EI awareness may be seen in the literature in EI studies using various EI models in Australia, Netherlands, and Norway (Akerjordet & Severinsson, 2004; Humpel & Caputi, 2001; van dusseldorp et al., 2010), little is known about EI and PMHN in the United States. In the *Journal of the American Psychiatric Association*, only four articles discussing EI research were published since 1995. One published article described the presentations at the 2013 National American Psychiatric Nurses Conference and mentioned my presentation of a pilot study on EI, *Relationship between Emotional Intelligence and Leadership Behaviors of Psychiatric Mental Health Nurses* (October 2013, San Antonio, Texas). Two of the articles discussed the same EI research study.

The current study examined the EI of PMHN in three psychiatric nursing associations (two have international members and one has members local to Georgia) using two forms of EI assessment. Knowledge from this study could enrich PMHN's understanding of the value of EI in the United States and be used to propose a systematic model to enhance communication skills with patients.

PMHN focus on emotions and recognize the importance of using self-awareness skills; therefore, they are an ideal target population to learn about a model of EI and take both the MSCEIT and SREIS tests to determine if the tools demonstrate internal consistency reliability and convergent validity. PMHN work with a variety of patients with mental disorders such as major depressive disorder (MDD), bipolar, schizophrenia, stress disorders involving trauma, and substance disorders. Kwako, Szanton, Saligan, & Gill, 2011 found that traumatized depressed patients exhibited lower total EI. The researchers advocated that nursing interventions that encourage EI abilities involving understanding and managing emotions may prevent major depressive disorder (MDD) onset following trauma and could treat more chronic symptoms of MDD. Knowledge from this study could raise awareness of EI with PMHN in the United States to incorporate interventions that could facilitate managing emotions more effectively. Knowledge of EI could positively affect PMHN's emotional health as well as their patients. In order to measure EI, reliable and valid tools are necessary.

#### **Need for reliable and valid EI tools.**

Two instruments used for measuring EI in the current study are the MSCEIT and the SREIS. The MSCEIT is an expensive tool and is only available through a private company (Mayer et al., 2002). The SREIS is a free tool that is a self-rated EI scale

(Brackett et al., 2006). The SREIS is based on the MSCEIT and measures self-awareness of EI skills (Brackett et al., 2006). The MSCEIT is an ability-based assessment of EI that measures how well people perform tasks and solve emotional problems versus their subjective assessment of their emotional skills (Mayer et al., 2002). The SREIS is a self-report tool that measures a person's subjective assessment of EI skills and covers all domains of the MSCEIT (Brackett et al., 2006).

The MSCEIT is a commercial test (scoring is performed by a test company and the key is not made available to researchers); therefore, accessibility of data and cost become an issue (Austin, 2010). I was able to qualify for a researcher's discount to use the MSCEIT in a pilot study. The cost with the researcher discount is six dollars per participant with additional costs if feedback materials are used (Multi-Health Systems invoice, personal communication, November 13, 2013). Austin (2010) argued that researchers having access to these tests and their keys was necessary to promote developing and improving questions in the entire research community.

An alternative EI assessment tool to the MSCEIT is the SREIS, which is free and accessible to the entire research community (Brackett et al., 2006). Using both the SREIS and the MSCEIT with PMHN in this study could help reveal whether the SREIS is a reliable and valid EI tool that is a cost-saving alternative to the MSCEIT. Knowledge from this study could identify reliable and valid EI tools for nurses to use in practice, research, and educational settings as a means to recognize emotional strengths and challenges. PMHN and nurses in other specialties could take the information about their emotional strengths and challenges and perform strategies to increase self-awareness (e.g. journaling) and minimize the nursing challenges (e.g. aware of being overly positive).

For years researchers have debated the reliability and validity concerns of the Four-Branch Ability Model of EI's MEIS and MSCEIT. Knowledge from this study will add to the body of EI research and to the reliability of the internal consistency of the MSCEIT and SREIS EI tools specifically using a new population of study in the United States, the PMHN. Not only would having a reliable and valid tool offer insights to PMHN, it could be helpful for nurses in other areas of practice.

### **Emotional intelligence and the nursing shortage.**

The National Advisory Council on Nurse Education and Practice (2008) expected the difference between the supply and demand of registered nurses would rise to potentially insurmountable levels over the following 15 years. The American Association of Colleges of Nursing [AACN] (2011) recognized concerns of the shortage of registered nurses in the United States and the increased projected demands for nursing services and examined ways to address these concerns. Workforce analysts believed that the principal contributor to the projected nursing shortage related to the aging nursing workforce (Buerhaus, Auerack, & Staiger, 2009). AACN (2011) also acknowledged that another contributing factor was the nursing faculty shortage. AACN has examined ways to address the issue of the nursing faculty shortage so that nursing school enrollment could increase to meet projected demands for registered nurses and advanced practice nurses. Having reliable and valid EI tools could help nursing faculty identify their unique stressors to formulate strategies to be more successful in their work.

Feather (2009) believed that if nurse managers could increase their emotional skills, they could be more effective leaders, which could then decrease nursing turnover. Having reliable and valid EI tools could provide possible solutions in helping nurses

understand the effects of EI and in the future help educate and retain the current workforce in nursing. The very nature of the complexity of the nursing shortage requires multiple approaches to understanding and implementing solutions to the problem. Having reliable and valid EI tools brings to the forefront another possible solution, EI skills, and proposes that with more knowledge and understanding about EI and the use of reliable and valid EI tools, strategies can be recommended to address nursing shortage variables. EI testing can provide feedback for the current nursing workforce regarding emotional strengths and deficits helping to address possible solutions for change that could enhance knowledge of their own emotions and their nursing practice with reliable, valid and cost-effective EI tools. Future nurses can identify their EI levels while in school and incorporate coping skills to better prepare them for future stressors. Addressing the relationship of EI skills and the nursing shortage can make significant contributions to the solutions that could affect the quality of nursing practice, education, and research.

#### **Emotional intelligence and nursing.**

In discussing the significance of EI to nursing, three major areas are identified that have an impact on nurses and the results of nursing practice. These three areas are responsible for impacting patient outcomes through practice either directly or indirectly. They are: nursing practice, nursing education, and nursing research.

#### ***Nursing practice.***

Success in work and life depends on both cognitive abilities and personal qualities that involve perception, understanding, and regulation of emotion (Cherniss, 2010). EI has been identified as an important construct for nursing practice and as important as practical expertise (Codier, 2010; Wright, 2009). Akerjordet and Severinsson (2007)

found that EI “seems to lead to more positive attitudes, greater adaptability, improved relationships and increased orientation towards positive values” (p. 1406). Recent nursing graduates ranked items from the EI scale as most important to account for successful early career performance (Rochester, Kilstoff, & Scott, 2005). Bowles and Candela (2005) found that the vast majority of recent RN graduates believed their work environment was stressful and not favorable to providing safe patient care and 30% of the sample left their first jobs within a year. Lavoie-Tremblay, O’Brien-Pallas, Gelinias, Desgorges, and Marchionni (2008) stated that because of the health human resources crisis, the health-care system could not afford to lose any healthcare providers, especially the recent graduates and younger nurses. Having reliable and valid EI tools could help new nurses be better prepared for nursing practice when nurse educators, being proactive in their students’ education, help them identify emotional strategies. Understanding and implementing EI strategies could be another approach for nurse educators to consider in curriculum development. Enduring strategies have possible implications for future new nurse practice and retention.

#### *Ethics and EI.*

Ethics is an important aspect of psychiatric nursing that can impact the standards of care for psychiatric patients in hospitals (Eren, 2014). Factors leading to unethical behaviors include insufficient personnel, excessive workload, working conditions, and lack of supervision (Eren, 2014). Emotional Intelligence has been found to be a predictor of individual ethics (Cabral & Carvalho, 2014; Mesmer-Magnus, Viswesvaran, Deshpande, & Joseph, 2010; Singh, 2011) and to have a strong relationship with ethical ideology (Angelidis & Ibrahim, 2011). Pizarro and Salovey (2002) discussed the link of

emotions and moral development noting how emotions, particularly empathy and guilt, are powerful sources of motivation and have a significant role in socialization. Pizarro and Salovey used the Four-Branch Ability Model of EI to organize the functions of morally relevant emotions such as empathy, guilt, shame and disgust. The authors also demonstrated how parents and educators could foster empathic responses available in children and help them use their emotions to encourage critical thinking to work through moral situations and moral dilemmas. The authors advocated parents and educators to incorporate emotions in helping children connect how they feel after an incident (inductive discipline) in order to link to moral principles. The authors concluded that the Four-Branch Ability Model of EI provides a framework to understand the role of emotions in moral processes.

Knowledge from this study could identify reliable and valid tools to measure EI in PMHN to further explore the relationship of EI and ethics in future studies. In the constantly changing and stressful healthcare environment, nurses are faced with ethical situations that can negatively affect patient outcomes. Having reliable and valid EI tools could give nurses more resources to help them be proactive in understanding how their emotions can be valuable assets in the ethical-decision making processes.

In order to provide high quality patient-centered care in challenging environments, nurses need safe and practical skills as well as effective EI skills (Freshwater & Stickley, 2004). Freshwater and Stickley (2004) concluded that EI needs to be examined in more depth because EI was at the heart of learning to care for oneself and others.

The MSCEIT was normed on a sample of 5000 in North America (Mayer et al., 2002). PMHN are hypothesized to have average or higher EI compared to the normed



sample because of the nature of their focus using communication skills and of their nursing practice with an emphasis on emotional health. Knowledge from this study will identify the level of EI using the MSCEIT and SREIS in PMHN.

*Nursing education.*

Studies published on nursing students and EI used the ability and trait/mixed models of EI. EI is not mentioned in the psychiatric nursing textbook reviewed for this study (Boyd, 2015) although EI content was identified in nursing leadership literature (Akerjordet & Severinsson, 2010; Feather, 2009; Vitello-Cicciu, 2001, 2002, 2003). Bellack (1999) called for nurse educators to teach nursing students EI skills because she believed nursing students were graduating and lacking emotional and social competencies in order to be successful to adapt to the world of work. Nurses believed that during their undergraduate education aspects of emotional intelligence were not adequately addressed (Rochester et al., 2005). If nurse educators understood the concept of EI and had tools to assess their students' EI in an accurate way, EI strategies could be taught to help future nurses be more prepared for the many stressors in nursing. Knowledge from this study will add information about reliable and valid EI tools to aid nurse educators to identify EI levels in their students.

Nurse educators need empirical evidence to choose pertinent content to include in nursing curricula. Psychiatric mental health nurse educators are already teaching communication skills in their courses and could add EI skills (ways to more effectively perceive, use, understand, and manage emotions) to enhance nursing students' education that could not only impact their own emotional health but their future patients as well. Teaching EI skills could impact the future education of not only PMHN but other nursing

specialties as well by teaching nursing strategies to increase self-awareness and to minimize the identified deficits of EI abilities.

*Nursing research.*

The Mayer-Salovey-Caruso Ability Model of EI has been the theoretical framework for many research studies including nursing studies. The EI research literature demonstrates different EI models and definitions of EI (Roberts, MacCann, Matthews, & Zeidner, 2010). Ability EI models measure a different concept than personality trait or mixed EI models (Mayer, Salovey, & Caruso, 2000). Mixed trait models measure EI as personality characteristics and not as a specific ability (Mayer et al., 2000). One of the criticisms against the EI movement was that it was “crass, profit-driven, and socially and scientifically irresponsible” (Sternberg, 2002, foreword). Another criticism was that the concept of EI was invalid because it was defined too broadly and inclusively without an intelligible meaning (Locke, 2005). Mayer, Roberts, and Barsade (2008) acknowledged that the term EI covered “too many things – too many different traits, too many different concepts”, but proposed that EI as an ability model had a meaningful theory that was different from models that described it as a mix of personality traits (para. 2). Ashkanasy and Daus (2005) agreed that Mayer and Salovey’s 1997 working model of EI was the basis for future research for EI – not the mixed or trait approaches. Caruso (2008), too, clarified that the ability model of EI was based on an intelligence framework and was considered a standard intelligence that could be measured. Roberts et al. (2010) concluded that the only logical construct to be called EI was the Four-Branch Ability Model of EI and advocated for more research to be conducted using EI tools. Maul

(2011) agreed that EI is a young construct and advocated for more research to examine the factor structure.

The conduct of this study should add pertinent information to the discussion of EI and promote the purpose and practical implications of EI. Nursing studies on EI are varied depending upon the theoretical model, definition of EI, and tools used. The study advocated the Mayer-Salovey-Caruso Four-Branch Ability Model of EI be used in future nursing research to provide consistency in reporting and promoting EI strategies. Knowledge from this study could verify an EI model and reliable and valid EI assessment tools to guide future nursing studies using different nursing specialties and students that could impact the future education of all nurses. Having an EI model and reliable and valid EI assessment tools could also positively impact healthcare and is the fifth area of significance of this study.

#### **Emotional intelligence and healthcare.**

Nurses are an important part of the healthcare team (ANA, 2010b). PMHN participate on interdisciplinary treatment teams to discuss psychiatric patients' treatment plans. Having effective communication skills is an important aspect of being a vital member of the team. EI includes both personal and interpersonal skills, which can help healthcare workers handle change more effectively and enhance the quality of care in the future creating a compassionate and healing healthcare environment (Akerjordet & Severinsson, 2004). Research on EI and healthcare demonstrate a variety of definitions of EI (Birks & Watt, 2007). Having knowledge of reliable and valid EI tools adds to the literature of EI in healthcare by promoting the Four-Branch Ability Model of EI and tools to measure EI. Positive patient outcomes need, not only strong EI nurses, but also an

entire healthcare team who is paying attention to how their own emotions affect their decision-making processes.

### **Theoretical Frameworks**

Two theoretical frameworks are the basis for this study: The Mayer, Salovey and Caruso Four-Branch Ability Model of EI (Mayer & Salovey, 1997) (See Appendix B) and Hildegard Peplau's Theory of Interpersonal Relations in Nursing (1952). Hildegard Peplau's framework is described first to demonstrate how the Four-Branch Ability Model of EI can be seen to extend and build upon the concepts in Peplau's model.

#### **Interpersonal Relations in Nursing.**

According to Peplau (1952), "nursing is a significant, therapeutic interpersonal process" (p. 16). Hildegard Peplau first published her theory in a book in 1952:

*Interpersonal Relations in Nursing: A Conceptual Frame of Reference for*

*Psychodynamic Nursing*. She stated in her preface that Dr. Harry Stack Sullivan's Theory of Interpersonal Relations was one of the most useful theories in explaining observations in nursing (1952). Peplau (1952) used Dr. Sullivan's theory to guide her development of a theory to help nurses understand human behavior. The goal of this theory was to help nurses improve their relationships with patients (Peplau, 1952). Peplau defined nursing as "a human relationship between an individual who is sick, or in need of health services, and a nurse especially educated to recognize and to respond to the need for help" (1952, pp. 5-6).

Peplau (1952) described steps to psychodynamic nursing as the process of recognizing, clarifying, and building a helpful relationship with a patient, which results in

the patient and the nurse growing as a result of the learning that occurred in the relationship. Two major assumptions undergird Peplau's theory:

1. The kind of person each nurse becomes makes a substantial difference in what each patient will learn as he [she] is nursed throughout his [her] experience with illness.
2. Fostering personality development in the direction of maturity is a function of nursing and nursing education; it requires the use of principles and methods that permit and guide the process of grappling with everyday interpersonal problems or difficulties. (Peplau, 1952, xii)

Peplau (1952) advocated that the central task of nursing schools should be to aid the fullest development of the nurse as a person who is aware of how he or she functions in a specific situation. The foundational premise for Peplau's theory stated that "the extent to which each nurse understands her [his] own functioning will determine the extent on which she [he] can come to understand the situation confronting the patient and the way he [she] sees it" (1952, xii).

Two of the most important aspects of the Peplau's theory were participant observations and empathic linkages (Peplau, 1997). Peplau described the component of participant observation as interactions or relations (connections or patterns that develop in the relationship) between the nurse and the patient. Peplau concluded that if nurses could observe and analyze their own behaviors, then nurses could be more aware of the needs, intentions, and messages they convey to patients. Empathic linkages was defined as "the ability to feel in oneself the emotions experienced by another person in the same situation" (Peplau, 1997, p. 163). For example, empathic linkages can occur when a nurse

is interviewing a patient experiencing extreme anxiety, and the nurse begins to be aware that both the patient and the nurse are talking rapidly (Forchuk & Boyd, 2015). In order to determine the source of the feeling, the nurse has to first be aware of his or her feelings and then analyze those feelings (Forchuk & Boyd, 2015).

In Peplau's 1952 book describing the *Interpersonal Relations in Nursing Theory*, she described four phases in the nurse-patient relationship: orientation, identification, exploitation, and resolution (p. 21). In later writings, Peplau (1997) promoted three phases of the nurse-patient relationship: orientation, working, and termination. During the orientation phase, the nurse is beginning to know the patient and identifying pertinent information. These first interactions set the tone for future interactions based on professional and not social relations by conveying professional interest and receptivity to the patient. Peplau also emphasized the importance for nurses to be aware and identify nurse and patient preconceptions and stereotypes, which can affect the outcome of the relationship. During the working phase, Peplau saw that the major work of the nurse-patient relationship occurred. Peplau further described the working phase as including nursing skills such as giving patient care, teaching, or counseling. The third phase of the nurse-patient relationship is the termination phase, which includes a time to summarize and provide closure (Peplau, 1997). The time period for the nurse-patient relationship can vary depending upon where the relationship is taking place with some being short (e.g. acute hospital settings) and others longer (e.g. care of chronically ill in long-term settings) (Peplau, 1997). Forchuk and Boyd (2015) describe the termination phase as the resolution phase because the patient ends the therapeutic relationship with the nurse and

connects with community resources using newly found understanding and practicing of new behaviors.

Peplau (1997) described challenges in the nurse-patient relationship as a result of the nurses working through the results of unintended consequences of their words and behaviors in their relationships with patients. Peplau advocated for nurses to continue to learn the conceptual competencies and theoretical concepts in nursing and to keep enlarging the awareness of the nurses' behaviors as a person. Peplau's 1952 book outlined the major areas of learning for nurses to recognize the role of anxiety (both in the nurse and patient) and the importance of self-awareness: "The meaning of behavior in all nursing situations becomes clearer when the view of self that both nurse and patient hold is understood" (p. 222). Peplau (1952) emphasized that the changes in the behavior of patients is largely the result of changes in the behavior of the nurse in the relationship with them.

Peplau's theory (1952) of Interpersonal Relations in Nursing serves as a foundation for the current study of EI. The theory of Interpersonal Relations in Nursing focuses on self-awareness as the foundation to understanding behaviors which is the ultimate focus in nursing for patient's behaviors to change in healthy ways. Mayer, Salovey, and Caruso's Four-Branch Ability Model of EI takes the foundation of the importance of self-awareness and shows in a systematic way how nurses can understand EI and how EI can affect nurses as well as the relationships with people around them including co-workers and patients. The next section will outline Mayer, Salovey, and Caruso's Four-Branch Ability Model of EI.

### **The Mayer, Salovey, and Caruso Four-Branch Ability Model of Emotional Intelligence.**

Mayer, Salovey and Caruso (2004) argued that EI meets the standards to be classified as an intelligence because of three criteria. First, the test items on the MSCEIT can be operationalized in such a way that there are correct answers. Second, EI demonstrates patterns of correlations such as a factorial unified domain that are similar to those of known intelligences and correlates only modestly with other intelligences. Third, EI should develop with age and have predictive validity. The following section on the model and description of the MSCEIT further develops these criteria.

This model has four main concepts:

1. Perception, appraisal, and expression of emotion
2. Emotional facilitation of thinking
3. Understanding and analyzing emotions/employing emotional knowledge
4. Reflective regulation of emotions to promote emotional and intellectual growth (Mayer & Salovey, 1997, p. 11)

Mayer and Salovey (1997) described each branch and explained how each branch is distinct and builds on the previous level (See Appendix C).

#### ***Perception, appraisal, and expression of emotion.***

The first branch is perception, appraisal, and expression of emotion (Mayer & Salovey, 1997). The perceiving aspect relates to the ability to identify emotions in oneself and others as well as other stimuli including voices, stories, music, and works of art (Brackett et al., 2006). This branch identifies how as infants grow developmentally, they



identify emotions and emotional content in themselves, other people, and objects (Mayer & Salovey, 1997). This ability continues to mature as infants develop through the expression of accurate emotions (Mayer & Salovey, 1997). Emotionally intelligent people understand “the expression and manifestation of emotion, they are also sensitive to its false or manipulate expression” (Mayer & Salovey, 1997, p. 12). This branch of EI is the lowest, simplest group of abilities and leads to the next branch.

***Emotional facilitation of thinking.***

Emotional facilitation of thinking describes the relationship between emotions and general intelligence (Mayer & Salovey, 1997). This branch “concerns the ability to use emotions to focus attention and to think more rationally, logically, and creatively” (Brackett & Salovey, 2006, p. 35). Using emotion includes “the ability to harness feelings that assist in certain cognitive enterprises, such as reasoning, problem solving, decision making, and interpersonal communication” (Brackett et al., 2006, p. 781). Emotions assist people to prioritize their thinking by directing their focus to important information (Mayer & Salovey, 1997). Emotions evolve in a “processing arena, in which emotions may be generated, felt, manipulated, and examined, so as to be better understood” (Mayer & Salovey, 1997, p. 13). This ability can provide multiple perspectives and problem solving approaches (Mayer & Salovey, 1997).

***Understanding and analyzing emotion; Employing emotional knowledge.***

Understanding and analyzing emotion involves employing emotional knowledge (Mayer & Salovey, 1997). This branch involves language and propositional thought to reflect the ability or capacity to analyze emotions (Brackett & Salovey, 2006). This branch of EI includes the way emotions combine, progress, and transition from one

emotion to another (Brackett & Salovey, 2006). Mayer and Salovey (1997) described how emotions evolve: As early as childhood, people recognize emotions and name them. As people grow older, they are able to identify the relationships between emotions (i.e. after a loss, a person may feel sad). They also begin to acknowledge that emotions can be complex, contradictory (i.e. can feel love and hate at the same time), and can occur in a pattern (i.e. anger to shame) (Mayer & Salovey, 1997). People who are skilled at understanding emotions have an extensive vocabulary and “appreciate the relationships among terms describing different feeling states” (Brackett & Salovey, 2006, p. 35).

***Reflective regulation of emotions to promote emotional and intellectual growth.***

The highest branch level, reflective regulation of emotions to promote emotional and intellectual growth concerns the conscious regulations of emotions, first, by being open to feelings, and then, actively engaging or detaching from emotions at appropriate times (Mayer & Salovey, 1997). In order to manage one’s feelings, “people must be able to monitor, discriminate, and label their feelings accurately, believe that they can improve or otherwise modify these feelings, employ strategies that will alter their feelings, and assess the effectiveness of these strategies” (Brackett & Salovey, 2006, p. 35).

Emotionally mature individuals will wait to process an immediate, intense experience in order to apply insights and energy to the reasoning process in a calm manner (Mayer & Salovey, 1997). With further growth, emotionally mature individuals exhibit a more “consistently reflective or meta-experience of mood and emotion” (Mayer & Salovey, 1997, p. 14). Meta-evaluation and meta-regulation are involved in the meta-experience (Mayer & Salovey, 1997). Meta-evaluation involves how much attention the mood

receives and meta-regulation involves how a person responds to their different emotions and moods (Mayer & Salovey, 1997).

***Relationships/Structure.***

The four main concepts' structure (See Appendix C) is a hierarchy (Mayer & Salovey, 1997). The more basic psychological processes are at the bottom (foundation) and the more integrated processes are at the top (Brackett et al., 2006). The more advanced emotional abilities at the top are thought to be dependent on the lower level abilities to some extent (Brackett et al., 2006). Below each branch are four horizontal boxes, which list representative abilities and demonstrate when these abilities develop (earliest are to the left, and as they move to the right, later-developing abilities) (Mayer & Salovey, 1997).

***Branches of the MSCEIT.***

Mayer, Salovey, and Caruso (2004) developed tools to operationalize each branch of the EI model with the Multi-Factor Emotional Intelligence Scale (MEIS) being first. Ciarrochi, Chan, and Caputi (2000) critically evaluated EI as measured by the MEIS and found support for the reliability and validity of the MEIS but also addressed potential limitations. The current tool is the Mayer-Salovey-Caruso Emotional Intelligence Test [MSCEIT] (Mayer, Salovey, & Caruso, 2008). The MSCEIT assesses the four-branches of EI – perceiving, using, understanding, and regulating emotions, which are four interrelated emotional abilities (Brackett et al., 2006; Brackett & Salovey, 2006). The MSCEIT contains 141-items which are divided into eight tasks (two to each branch) (Brackett & Salovey, 2006). Seven scores can be obtained from using the MSCEIT: total EI score, two area scores (experiential, which is the combination of branches one and

two, and strategic, which is the combination of branches three and four), and one score for each of the four branches (Brackett & Salovey, 2006).

The first branch of the MSCEI, perceiving, is measured by asking the participant to identify the emotions expressed in pictures of people's faces (faces) as well as the feelings suggested in artistic designs and landscapes (pictures) (Brackett & Salovey, 2006). The participant examines a picture and then chooses one of five emotions that is represented by the picture (Brackett & Salovey, 2006). The second branch of the MSCEIT examines two tests: sensations and facilitation (Brackett & Salovey, 2006). In this branch, the MSCEIT is measuring a participant's ability "to describe emotional sensations and their parallels to other sensory modalities using a non-feeling vocabulary (sensations), and identify the feelings that might facilitate or interfere with successful performance of various cognitive and behavioral tasks (facilitation)" (Brackett & Salovey, 2006, p. 36). For example, a participant is given an emotion to imagine how it feels such as happy (sensations). Then the participant is asked to look at a list of adjectives related to other sensory modalities (e.g. hot, red, sour) and rate how much the sensory emotion (happy) relates to the other sensory modalities (hot, red, sour) on a five point likert scale: not alike to very much alike (facilitation). The third branch of EI, understanding emotions, is measured by two tests: blends and changes (Brackett & Salovey, 2006). Blends are measured by a person's ability to analyze blended or complex emotions (Brackett & Salovey, 2006). For example, a list of words such as "acceptance, joy, and warmth often combine to form..." and then asked a question stating which of the following is most appropriate (Brackett & Salovey, 2006, p. 36). Changes is measured by asking participants to measure how "emotional reactions change over time or how they

follow upon each other” (Brackett & Salovey, 2006, p. 36). The fourth branch of EI, managing emotions, has two subsets: social and emotional management (Brackett & Salovey, 2006). Social management involves how a person manages the emotions of others and emotional management involves how a person regulates his or her own emotions (Brackett & Salovey, 2006). For example, a participant reads a short story describing a scenario. The participant is asked to determine how effective several different courses of action would be in coping with the emotions of the story.

### **Assumptions**

There are five assumptions for this current study. First, EI is a viable scientific construct and measurement is possible through a set of pre-specified scientific operations (Matthews, Zeidner, & Roberts, 2002). For an ideal test of EI, the following four criteria must be minimally satisfied: reliability, content validity, predictive validity (and usefulness), and construct validity (Matthews et al., 2002, p. 177). The goal is to show that EI is “a form of cognitive ability” and “independent from existing, well-established constructs, like personality or cognitive abilities” (Matthews et al., 2002, p. 178). The Four-branch Ability Model of EI asserts that EI is an intelligence that meets three empirical criteria: EI test questions can be operationalized with “more-or-less correct answers”, EI shows specific patterns of correlations like other known intelligences, and EI should develop with age (Mayer et al., 2004, p. 200).

Second, Mayer and Salovey (1997) stated for EI to exist, studies must be able to measure the ability of EI and the multiple abilities of EI must connect to one another. In order to measure EI, the abilities under EI must be “meaningfully different from general intelligence and yet related enough to qualify as an intelligence” (Mayer & Salovey,

1997, p. 16). The assumption for this study is that both the MSCEIT and SREIS measure the concept of EI.

Third, having a high EI means a more successful life and specifically pertaining to this nursing study, a more successful nursing practice. Using the MSCEIT, Lopes, Salovey, and Straus (2003) found the fourth branch of the model (ability to manage emotions) was negatively associated with reports of conflict with friends, but positively associated with report of positive social relationships.

Fourth, the participants are PMHN and who are altruistically motivated to engage in research. After I presented the pilot study at the American Psychiatric Nurses Association national conference, several nurses approached me to ask questions about EI. Other nurses commented in the evaluation report about wanting to learn more about EI (Lisa Nguyen, personal communication, January 1, 2014). It is important that the PMHN take adequate amounts of time to answer the EI test questions honestly and thoroughly. The consent form clearly states the amount of time required to complete the surveys so participants can know in advance and can plan accordingly.

Fifth, the SREIS, as a self-reported EI test, is a viable option to ability model tests such as the MSCEIT to use to study EI. Self-report tests have been criticized in the past due to possible bias (Roberts et al., 2010) and distortion; for example, attempting to obtain a job by answering the questions a particular way (Christiansen, Janovics, & Siers, 2010; Day & Carroll, 2007; Grubb & McDaniel, 2007). The SREIS is one of several self-report EI tools based on the Four-Branch Ability Model of EI (Brackett et al., 2006). Other self-report EI tests are based on different theories of EI, which have been reported

to measure a concept different from the concept MSCEIT measures (Brackett & Mayer, 2003).

### **Research Questions**

Four research questions were addressed:

1. Are the emotional intelligence total scores in psychiatric-mental health nurses (PMHN) on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?
2. Does the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) demonstrate internal consistency reliability to measure emotional intelligence in psychiatric-mental health nurses (PMHN)?
3. Does the Self-Rated Emotional Intelligence Scale (SREIS) demonstrate internal consistency reliability to measure emotional intelligence in psychiatric-mental health nurses (PMHN)?
4. Is there a correlation (convergent validity) between the Mayor-Salovey-Caruso Emotional Intelligence Test (MSCEIT) total and branch scores and the Self-Rated Emotional Intelligence Scale (SREIS) total and branch scores?

### **Definition of Terms**

For the purpose of this study the following definitions were used:

#### **Emotional Intelligence (EI):**

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. (Mayer & Salovey, 1997, p. 10)

**Nursing:**

The protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations. (ANA, 2010a, p. 3)

**Psychiatric-mental health nursing:**

The nursing practice specialty committed to promoting mental health through the assessment, diagnosis, and treatment of behavioral problems, mental disorders, and comorbid conditions across the lifespan. Psychiatric-mental health nursing intervention is an art and a science, employing a purposeful use of self and a wide range of nursing, psychosocial, and neurobiological evidence to produce effective outcomes. (American Psychiatric Nurses Association et al., 2014, p. 1)

**Self-awareness** – “the process of understanding one’s own beliefs, thoughts, motivations, biases, and limitations and recognizing how they affect others” (Forchuk & Boyd, 2015, p. 104).

**Therapeutic process** – “use of the nurse-patient relationship and the nursing process to promote and maintain a patient’s adaptive coping responses” (American Psychiatric Association, American Nurses Association, & The International Society of Psychiatric-Mental Health Nurses, 2007, p. 132).



**Limitations**

The current study had several limitations related to the method and sample of the study. The sample was non-random, voluntary, self-selected, and only part of the national organizations were contacted due to constraints to obtain contact information. The method limited sample representativeness or generalizability. The length of time (approximately one hour for both tests) was identified in the pilot study as a possible limitation to sample size and was also a concern for the current study.

The purpose of using the APNA, ISPN and MAAPNG nursing organizations was to find a plausible way to recruit psychiatric nurses nationally, internationally, and locally to participate in this study. It is possible that some of the PMHN could be members of one, two, or all three of the psychiatric nursing organizations in the sample, so the results of statistical tests to compare and contrast the organizations' EI scores and descriptive variables would not necessarily reveal accurate information.

**Delimitations**

The participants in this study were psychiatric nurses either licensed practical, registered or advanced practice nurses who were either currently working in psychiatric settings, had worked in psychiatric settings, or had retired from working in psychiatric nursing. The psychiatric nurses were members of the American Psychiatric Nurses Association (APNA), the International Society of Psychiatric-Mental Health Nurses (ISPN), or Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG) or psychiatric nurses who received the e-mail describing the study from a member of one of the associations. The ISPN and APNA are international psychiatric nursing associations so the psychiatric nurses are from all over the world. The

MAAPPNG organization is composed of psychiatric nurses in Georgia, United States of America. Nurses participating had to comprehend English due to the MSCEIT and SREIS tools being in English. A PMHN chose to be a participant from any one of the three recruitment e-mails but was asked to only complete both EI tests one time.

### **Summary of Chapter One**

Emotional Intelligence was first defined in 1990 and revised in 1997 by two psychologists, Jack Mayer and Peter Salovey as an ability to perceive emotion, access and generate feelings when they facilitate thought, understand and regulate emotions. A lack of emotional skills in nurses affects their personal well-being and has the potential to negatively affect patient outcomes (Codier, Muneno, & Frieitas, 2011; McQueen, 2004). Psychiatric-mental health nurses (PMHN) recognize the need for effective emotional skills to work with patients who may be struggling with alterations in mood and cognition (Cleary et al., 2011; Warelow & Edward, 2007). They, of all groups of nurses, were an excellent population for assessment of emotional intelligence. In fact Hildegard Peplau's theory of Interpersonal Relations in Nursing (1952) has been the foundation of psychiatric-mental health nursing education. The Four-Branch Ability Model of EI (1997) builds on Peplau's theory of Interpersonal Relations in Nursing (1952) and provided an intentional and systematic framework to study the role of emotional abilities in social functioning by explicating the cognitive and emotional mechanisms (Brackett et al., 2006). The Four-Branch Ability Model of EI and Peplau's theory of Interpersonal Relations in Nursing (1952) were the conceptual frameworks for the study.

Nurse educators in Australia, Norway, and the United Kingdom (Akerjordet & Severinsson, 2004; Hurley, 2008; Hurley & Rankin, 2008; Warelow & Edward, 2007) all

advocate for EI skills to be taught to PMHN to enhance nursing performance and improve patient outcomes, but little is known in the United States about EI and nursing education.

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is an ability-based assessment of EI (Mayer et al., 2002). The Self-Reported Emotional Intelligence Test (SREIS) was based on the MSCEIT and measures self-awareness of EI skills (Brackett et al., 2006). Having knowledge of the EI of psychiatric-mental health nurses could both demonstrate a measure of the extent to which the nurses practice with EI, as well as serve as a measure of comparison for the MSCEIT, which has been normed on a sample of 5000 non-nurse respondents. PMHN need accessible, affordable, feasible, reliable and valid EI tools to identify strengths and deficits in perceiving, using, understanding and managing their own emotions so they can work more effectively with patients who have challenging, emotional disorders. Knowledge from this study has the potential to identify accessible, affordable, feasible, reliable and valid EI tools for future use in not only PMHN, but also all nursing specialties.

## CHAPTER TWO

### Overview of Study

The Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence (EI) proposes that a person's thinking can be more intelligent if the person recognizes the value of perceiving, using, understanding, and managing emotions and uses this information to enrich cognitive processes (Brackett et al., 2006). No profession recognizes the need for these values more than that of psychiatric-mental health nurses (PMHN) whose practice is often guided by Hildegard Peplau's theory of Interpersonal Relations in nursing (Peplau, 1952). It is through Peplau's theory that PMHN initiate and maintain therapeutic relationships with their patients. The Four-Branch Ability Model of EI supports Peplau's theory and provides a systematic and intentional framework for studying the role of emotional abilities in relationships by explaining the cognitive and emotional components (Brackett et al., 2006). The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the MSCEIT and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the SREIS scores (total and branch). The study used Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI as conceptual frameworks to guide the research. Two

instruments were used in the study: the MSCEIT and the SREIS. Both instruments are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of EI (Brackett et al, 2006; Mayer et al., 2004); however, they differ in accessibility, cost, feasibility of use, and method of measurement (performance versus self-report). To consider adoption of EI assessments for identifying PMHN strengths and challenges, accessible, affordable, feasible, reliable and valid EI tools are needed. This chapter reviews the literature on EI and examines what is known and what is not known about EI.

### **Review of Literature**

The review of literature begins with a brief history of the term “emotional intelligence”, MSCEIT theorists, and EI theories. The remainder of the review of literature is organized into five areas of what is known and what is not known about EI with reference to: (1) emotional intelligence and psychiatric-mental health nurses (PMHN); (2) need for reliable and valid EI tools; (3) emotional intelligence and the nursing shortage; (4) the impact of EI on nursing (practice, education, and research); and (5) the impact of EI on healthcare. The gaps are discussed and the study is addressed to advocate for its significance.

#### **History of emotional intelligence.**

The history of the term “emotional intelligence” is explained to describe how the term has evolved. The background of MSCEIT theorists and a description of other EI theories is discussed to differentiate between the EI theories.

#### ***History of the term “emotional intelligence”.***

The term “emotional intelligence” (EI) began with Van Ghent in 1961 using the term in “an incidental fashion in literacy criticism”, then with Leuner in 1966 using the

term in psychiatry, and later in a doctoral student's dissertation (Wayne) in 1986 (as cited in Mayer et al., 2004, p. 198). In the 1980's there were psychological research studies that focused on how thoughts interacted with emotions (Salovey & Mayer, 1990).

Salovey and Mayer published the first definition of EI in an article in 1990. They defined EI "as the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 5). A second article by Mayer, Dipaolo, and Salovey (1990) demonstrated through an empirical study how aspects of EI appeared to be mental abilities. Mayer et al. (1990) hoped that by identifying EI abilities that involved well-defined skills, they could assess any deficits. The authors' goal was to help emotionally unintelligent people become "more emotionally pleasing to those around them, with a resultant higher level of satisfaction with life for all those involved" (p. 780).

The concept of EI has had mixed reviews in the literature and has been described as an invalid concept (Locke, 2005) and an elusive construct (Davies, Stankov, & Roberts, 1998). The concept of EI has also been reported to lack adequate empirical evidence (Conte, 2005; Joseph & Newman, 2010; Matthews et al., 2002; van Rooy & Viswesvaran, 2004; Waterhouse, 2006) and lack exposure in educational settings (Waterhouse, 2006).

### ***Background of emotional intelligence MSCEIT theorists.***

Salovey (2011) told the history of the Four-Branch Ability Model of EI in a chapter he wrote in a book called, *Most Underappreciated: Fifty Prominent Social Psychologists Describe Their Most Unloved Work*. Salovey described how he and John

Mayer became friends because of their shared interest in how mood and emotion affect cognitive processes. Salovey explained that he and John Mayer had studied mood aspects at Stanford University, but at different times. In 1987, Salovey invited Mayer (then on the faculty at State University of New York at Purchase) to help him paint a room in his new home in New Haven, CT. As they painted, they talked about research in personality-social psychology and how Mayer thought that most theories of intelligence did not focus in a systematic way on a place for emotions. Salovey expressed his thought that research did not focus on individual differences in how people interpreted their own and others' emotions and how emotion influenced thinking. As they continued the discussion, Salovey thought it was, perhaps, Mayer who first used the term "emotional intelligence". The authors developed a manuscript over the next few years entitled, *Emotional Intelligence* but to their dismay, multiple submissions to journals received negative responses. These responses included criticism that their work was not describing a type of intelligence nor was it advantageous to the research of emotions. Salovey and Mayer asked a colleague, Jerome L. Singer, to review their manuscript. Singer suggested submitting the manuscript to a journal he edited, *Imagination, Cognition, and Personality*, and the article was accepted. Salovey and Mayer's article defined EI and has been recognized as the beginning of the scholarly field of EI (Sternberg, 2002). Salovey (2011) stated that in the last 20 years people have cited this first EI article nearly 3,000 times.

#### ***Emotional intelligence theories.***

While Mayer and Salovey were researching and writing about the Four-Branch Ability Model of EI, other researchers and writers were also developing different EI

theories and models (Roberts et al., 2010). Two other prominent EI theories and models emerged in the 1990s: Dr. Reuven Bar-On's EI personality trait model and Dr. Daniel Goleman's mixed model of EI (Goleman, 1995), which included in the EI definition both personality traits and ability skills (Roberts et al., 2010). The trait and mixed models are sometimes grouped together because both use self-report tools to measure EI (Caruso, 2008; Mayer, Salovey & Caruso, 2008; Grubb & McDaniel, 2007; Neubauer & Freudenthaler, 2005). Salovey (2011) gave credit to journalist and psychologist Daniel Goleman for writing a book in 1995 called *Emotional Intelligence* that brought significant attention to the research of EI. However, Goleman's writings sparked a flurry of research in the field of EI claiming that EI matters twice as much as IQ (Mayer et al., 2000).

Mayer et al. (2000) compared mixed trait models to ability models of EI. The theorists explained that mixed trait models measured EI as personality characteristics and not as a specific ability. They claimed mixed trait models measured EI through self-judgments surveys (e.g. I understand...) and added EI-irrelevant variables (Mayer, Salovey, & Caruso, 2008). Roberts et al. (2010) also expressed concern regarding the use of the trait models and their measurement tools because the trait measurement tools did not assess a form of intelligence (almost complete divergence from intelligence), and that self-reports caused concerns of biases and distortions. Christiansen et al. (2010) agreed and found that self-report scales (used in trait models) and performance-based (used in ability models) assessed two very distinct constructs (personality versus cognitive ability). EI, as measured by the Four-Branch Ability Model of EI, was distinct from both cognitive ability and personality (Daus & Ashkanasy, 2005). In 2003, Brackett and



Mayer reported that if a person took both a self-report EI measure and an ability model EI measure test, different information about the same person would result. In 2006, Brackett et al. designed a self-report EI scale, SREIS, based on the theoretical framework of the Four-Branch Ability Model of EI.

Other research studies also used self-report or peer-report measures based on the Four-Branch Ability Model of EI instead of the performance measures (Joseph & Newman, 2010; Landa, Lopez-Zafra, Aguilar-Luzon, & de Ugarte, 2009; Montes-Berges & Augusto, 2007). Even though the SREIS is a self-report measure, the SREIS was developed to measure all four domains of EI measured by the MSCEIT (Brackett et al., 2006), and although there are studies comparing the results of both the SREIS and the MSCEIT in other populations (Brackett et al, 2006; Deepa & Krishnavenit, 2008; Dunn, Brackett, Ashton-James, Schneiderman, & Salovey, 2007; Kidwell, Hardesty, Murtha & Sheng, 2011; Webb et al., 2013), none are found in nursing research.

Codier (2010) found that nurse researchers who studied EI used the ability model, which she suggested may have greater utility compared to the trait model that she also studied. Additionally, Codier's work (2010) included a qualitative study of 75 nursing stories that provided evidence of the importance of EI to nursing practice.

The term "EI" is used regardless of the model employed by the researcher or writer. If a reader does not know that there are different models of EI, it is difficult to understand the significance of the study because the definition of EI is not clear. The confusion of the concept and theory of EI is evident in nursing literature (Altuntas & Akyil, 2011; Budnik, 2003; Codier, 2006; Codier, Kamikawa, Freel, & Morrison, 2011; Farmer, 2004; Herman, 2013; Humpel & Caputi, 2001; Hurley, 2013; Jenkins, 2006;

Millan, 2008; Munro, 2011; Quoidbach & Hansenne, 2009; Shanta, 2007; Shanta & Connolly, 2013; Vitell-Cicciu, 2001). The mixed models that include Goleman's EI theory and conceptual framework have been used in nursing studies and writings (Akerjordet & Severinsson, 2010; Bellack, 1999; Bryan, 2007; Cadman & Brewer, 2001; Carson, Carson, Fontenot, & Burdin, 2005; Cox, 2002; Cummings, Hayduk, & Estabrooks, 2005; Kooker, Shoultz, & Codier, 2007; Lucas, Laschinger, & Wong, 2008; McCallin & Bamford, 2007; Morrison, 2008; Rochester et al., 2005). Cadman and Brewer (2001) explored Goleman's concept of EI and used the two categories of personal and social competencies, which included self-awareness, self-regulation, motivation, empathy, and social skills of persuasiveness, conflict management, and leadership skills.

Bar-On's EI model (Bar-On & Parker, 2000) is an example of the personality trait model of EI that has been used as a conceptual model in nursing studies and writings (Allen, Ploeg, & Kaasalainen, 2012; Benson, Ploeg, & Brown, 2010; Codier, 2010; Geritz, Derksen, Verbruggen, & Katzko, 2005; Harper and Jones-Schenk, 2012). Bar-On described five components of EI: intrapersonal, interpersonal, adaptability, stress management and general mood (Bar-On, 2010). Bar-On's model defined emotional-social intelligence as "an array of interrelated emotional and social competencies and skills that determine how effectively individuals understand and express themselves, understand others and relate with them, and cope with daily demands, challenges and pressure" (2010, p. 57).

Petrides and Furham's (2006) model is a different trait EI model that is based on emotion-related traits and self-perceived abilities that are measured by self-report questionnaires. Petrides and Furham's trait model used the Trait Emotional Intelligence

Questionnaire-short Form (TEIQue-SF), which has been used in nursing studies (Fernandes, Salamonson, & Griffiths, 2012; Heffernan, Griffin, McNulty, & Fitzpatrick, 2010). Petrides and Furnham (2001) proposed two alternative labels to address the “semantic inconsistencies” of what they described were two fundamentally different EI constructs: emotional self-efficacy (trait EI) and cognitive-emotional ability (ability EI) (p. 427).

Although John Mayer and Peter Salovey have worked with many researchers in the last twenty years to operationalize the construct of EI, their chapter in 1997, *What is Emotional Intelligence*, not only defined EI more clearly but distinguished EI as an ability— not as personality traits (Mayer et al., 2004). John Mayer stated in an e-mail, “I would say that the four branch model was introduced by Peter and I in our 1997 article, but Dr. Caruso has been instrumental in developing the model and its measure” (personal communication, March 23, 2011). Salovey and Mayer provided not only an EI theory, but also a systematic program of research of EI.

### **Emotional intelligence and psychiatric mental-health nurses (PMHN).**

Psychiatric mental-health nurses (PMHN) have been the target population in EI studies using various EI models in Australia, Netherlands, and Norway (Akerjordet & Severinsson, 2004; Humpel & Caputi, 2001; van dusseldorp et al., 2010), but little is known about EI and PMHN in the United States. Researchers in the Netherlands used the Bar-on Emotional Quotient Inventory as their instrument to gain insight into the level of EI of PMHN (van Dusseldorp et al., 2010). The researchers found that the mean level of EI in PMHN in the Netherlands was significantly higher than EI in the general population.

As early as 2001, Australian researchers, Humpel and Caputi studied PMHN to explore the relationship between work stress, years of experience and what the researchers called EI, “emotional competency”. The researchers used the theoretical framework of the Four-Branch Ability Model of EI by Mayer and Salovey (1997), but stated that they would use the terms EI and emotional competency interchangeably. The researchers used the first version of the Mayer-Salovey test, the Multifactor EI Scale (MEIS) and found that a significant relationship between emotional competency and years of experience of the PMHN. The researchers advocated for EI training to be added to curriculums so that nurses would be more aware of the concept of emotional competence which ultimately could benefit employers, employees, and patients.

Hurley (2008), a psychiatric mental-health nurse in the United Kingdom, stated that recent professional review identified that EI was the very cornerstone upon which desirable mental health nursing abilities developed. Akerjordet and Severinsson (2004) agreed that EI is an important concept and interviewed PMHN about their experiences of EI in nursing practice and found that emotional learning and maturation processes were central to professional competence (e.g. personal growth and development). The researchers concluded that EI skills should be further clarified by empirical research because EI integrates important personal and interpersonal skills.

Dziopa and Ahern, nurses in Australia, (2009) examined the different ways mental health nurses develop quality therapeutic relationships. They acknowledged that their study found that the attributes that refer to self-awareness were less important in comparison to other attributes, which is different from previous research. They encouraged further research to examine self-awareness in mental health nurses.

I did a pilot study in 2013 to examine the relationship between EI and leadership behaviors of PMHN to determine if the MSCEIT demonstrated an acceptable internal consistency reliability to measure emotional intelligence in PMHN (See Appendices D-J). Using Cronbach's alpha, both the MSCEIT and the leadership test demonstrated acceptable internal consistency reliability. With the 12 PMHN, the results did not show a significant relationship between the nurses' total MSCEIT score of EI with the subscales of the leadership test. I concluded that more research was needed with larger samples to explore the relationship between EI and leadership skills in PMHN and, to validate the instrument with PMHN prior to further use with leadership or other concepts.

**Need for reliable and valid emotional intelligence tools.**

For over 20 years researchers have addressed the reliability and validity concerns of the Four-Branch Ability Model of EI's tools: MEIS (previously used) and now the MSCEIT. These published research studies and those examining the SREIS are examined next to determine the need for future research regarding the reliability and validity of the MSCEIT and SREIS EI tools.

***Reliability of MSCEIT.***

Mayer et al. (2002) used the standardization sample of the MSCEIT to assess internal consistency of the MSCEIT scales. The authors found that the MSCEIT had full-scale reliability of .91, area reliabilities of .90 (experimental) and .85 (strategic). The authors stated that the branch score reliabilities ranged from .74 to .89; thus, the findings supported the notion that the MSCEIT was a reliable test at the total, area, and branch levels. The authors clarified that subtasks were:

Somewhat less reliable, but the alpha coefficients are comparable to those on tests the such as WAIS-R...test users should be cautious about interpreting test scores at the subtask level, and place greater emphasis on the Branch, Area, and Total scores. (p. 35)

Several studies used the split-half reliability measure to evaluate the reliability using the internal consistency estimation and found satisfactory support for the reliabilities of the MSCEIT (Brackett et al., 2006; Brannick, Wahi, & Goldin, 2011; Eack et al., 2010; Ermer, Kahn, Salovey, & Kiehl, 2012; Mayer, Salovey, Caruso, & Sitarenios, 2003; Palmer, Gignac, Manocha, & Stough, 2005; Rossen, Kranler, & Algina, 2008; Ruiz-Aranda, Extremera, & Pineda-Galan, 2013). Keele and Bell (2008) examined the factorial validity of two trait based EI measures and the MSCEIT. The validity results of the study will be discussed later, but the researchers called for more investigation of the reliability of the MSCEIT. Follesdal & Hagtvet (2009) used the Generalizability Theory with 111 executives in Norway to test estimate variance components of the MSCEIT and estimate the generalizability of the scores. The researchers found lower scores for reliability and called for future studies to consider the multifaceted measurement design. One study used the test-retest reliability of the MSCEIT and found it to be high: .86 (Brackett & Mayer, 2003).

### ***Validity of the MSCEIT.***

Mayer, Salovey, and Caruso operationalized EI by developing the MSCEIT (Mayer & Salovey, 1997). Day and Carroll (2004) examined the construct validity of the MSCEIT by examining the MSCEIT's factor structure and its relationship with personality, gender, age, and experience. The researchers found that the MSCEIT scales

showed low correlations with the five personality factors (neuroticism, extraversion, open to experience, agreeableness, and conscientiousness). Women performed significantly better than men, and only partial support was found for the relationship between age and performance.

Trochim (2001) divided construct validity into two parts: Translation (examined when the operationalization was a reflection of the construct), which included face and content validity; and Criterion-related validity (examined whether using the theory of the construct, did the operationalization of the construct behave the way it should have), which included predictive, concurrent, convergent, and discriminant validity. Published research studies using the MSCEIT examining translation and criterion-related validity are discussed below.

*Translation validity.*

The authors of the MSCEIT had experts (21 members of the International Society of Research on Emotions [ISRE]) and 5000 people from various parts of the world endorse each MSCEIT test item (Brackett & Salovey, 2006). The experts, many who have spent their entire careers examining the phenomena of emotions, (e.g. how emotions are conveyed in facial expressions, emotional language and regulation) provided their expert judgment on each of the test's items.

*Criterion-related validity.*

In criterion-related validity, the MSCEIT is checked against a specific criterion (Trochim, 2001). Day and Carroll (2004) examined criterion-related validity by examining the relationship of the MSCEIT with individual and group performance on a decision-making task and with measures of individual and group level citizenship

behavior. The researchers' findings suggested only the Emotional Perception scale of the MSCEIT predicted individual performance on the task. Hereafter four types of criterion-related validity will be addressed: (1) Predictive – the ability of the MSCEIT to predict what it theoretically should be able to predict; (2) Concurrent – the ability of the MSCEIT to theoretically distinguish between groups it should be able to distinguish between; (3) Convergent – degree to which the MSCEIT is similar to other constructs with which it theoretically should be (e.g. SREIS – based on the same ability EI model); (4) Discriminant – degree to which the MSCEIT is not similar to other constructs it should not be similar to such as the five personality factors (neuroticism, extraversion, open to experience, agreeableness, and conscientiousness).

*Predictive validity and incremental validity.*

Several studies addressed the predictive validity (the ability of the MSCEIT to predict what it theoretically should be able to predict) of the MSCEIT with some demonstrating stronger findings supporting predictive validity (Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004; Brackett et al., 2006; Iliescu, Ilie, Ispas, & Ion, 2013) than others (Joseph & Newman, 2010; Rode et al., 2007). Brackett and Mayer (2003) explained that for a new construct to be accepted into the field, the new construct must explain variance that is not accounted for by well-known constructs. The researchers found that the lower scores of the MSCEIT (personality and verbal SAT scores were controlled) remained predictive of social deviance. Brackett et al. (2004) reported analyses based on participants (n=330) who were part of a larger study of the relationship between the MSCEIT, Big Five personality traits (neuroticism, extraversion, open to experience, agreeableness, and conscientiousness), and the College Student Life Space



scale (describes the college students' daily lives including self-care behaviors, leisure pursuits, and interpersonal relations). The researchers found that lower EI scores in males were associated with negative outcomes such as illegal drug and alcohol use, deviant behaviors, and poor relations with friends. Brackett et al. (2006) reported results of three studies with the second and third studies specifically addressing incremental validity. In the second study, the researchers studied 355 undergraduates at a private research university and found the MSCEIT to be incrementally valid with only males in predicting perceived social competence with friends. The researchers' findings suggested that males with lower MSCEIT scores were "more likely to use both passive and active destructive strategies in response to both relationship conflict and others' reports of positive events" (Brackett et al., 2006, p. 788). In the third study, Brackett et al. (2006) studied 50 undergraduates at a liberal arts university and found the MSCEIT to be associated with social competence, but only for the males. The researchers provided additional evidence that supported the incremental validity of the MSCEIT.

Iliescu et al. (2013) used four samples and over 2,000 participants to examine the criterion and incremental validity of the Romanian version of the MSCEIT. The researchers' findings suggested the MSCEIT had incremental validity over personality when predicting job performance. The researchers encouraged usage of the MSCEIT as a sound measure of EI.

Rode et al. (2007) examined the direct and moderated effect of the MSCEIT on individual performance with 378 business undergraduate students. Findings revealed the effects of EI on performance were more indirect than direct in nature.

Joseph and Newman (2010) did a meta-analysis and found that the ability model of EI had strong theoretical propositions and recognized decades of research in personality and social psychology. The authors expressed concern that the ability model exhibited criterion validity only in localized settings and called for more research to assess the relationship between EI and actual job performance.

*Concurrent validity.*

“Concurrent validity is the degree of correlation of two measures of the same concept that are administered at the same time “ (LoBiondo-Wood & Haber, 2006, p. 560). Eack et al. (2010) studied 64 outpatients who were diagnosed with either schizophrenia, schizoaffective, or schizophreniform and examined the concurrent validity between the MSCEIT and relevant functional outcomes, Brief Psychiatric Rating Scale total, and neurocognitive composite scores in partial correlation analyses. The researchers adjusted before and after for demographics (age, gender, education, and illness duration). Findings revealed limited relationships between the MSCEIT and functional outcomes.

*Convergent validity.*

Convergent validity is the correlation between different EI measures (Trochim, 2001) for example like the MSCEIT and the SREIS. Several studies compared the MSCEIT to other EI tests to address convergent validity and one compared the MEIS to the MSCEIT. Brackett and Mayer (2003) found that the MSCEIT (ability model) and self-report EI tests (Emotional Quotient Inventory and the Self-Report EI test) were weakly related (lack of convergence) partly due to the distinct ways the constructs were defined. The researchers also found that the low correlations between ability and self-report measures may have been due to their different measurement approaches

(performance based versus self-report). Brackett et al. (2004) found the MSCEIT scores were only modestly correlated with Verbal SAT scores.

Goldenberg, Matheson, and Mantler (2006) assessed the patterns of convergent validity for the MSCEIT and a self-report measure of EI (Schutte et al., 1998). Neither the total scores nor the corresponding dimensions on both measures were significantly correlated. In this study, the self-report was referred to as the SREIS but is not the same self-report as the self-report scale by Brackett et al. (2006). When Schutte et al. (1998) developed the tool, they based it on the original 1990 Mayer-Salovey Ability EI Model and did not give the tool a name in that article. In other literature the Schutte self-report EI test is referred to as the “Schutte Self-Report EI Inventory” (SSRI) (Deepa & Krishnaveni, 2008), the “Schutte Emotional Intelligence Scale” (SEIS) (Martins, Ramalho, & Morin, 2010), the “Assessing Emotions Scale” (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2006), and the “Self-Report EI Test” (SREIT) (Brackett & Mayer, 2003).

Eack et al. (2010) examined the degree to which performance on the MSCEIT of 64 outpatients diagnosed with schizophrenia, schizoaffective or schizophreniform disorders converged with behavioral assessments of social cognition provided by the Social Cognition Profile. The researchers found no areas of the MSCEIT performance to be significantly related to any of the Social Cognition Profile subscales demonstrating little convergence with the Social Cognition Profile.

One of the goals of Maul’s study (2011) with 241 participants in California was to examine the convergence between the MEIS and MSCEIT. Maul used the scores of his study and two other sources of data to create a consensus-scoring guide for the MSCEIT.

He found a high degree of convergence between the MEIS and the MSCEIT, which can be interpreted that the MEIS and the MSCEIT measure the same construct.

Webb et al. (2013) replicated and expanded previous research on EI measures and intelligence measures with 65 participants in the Boston area to take the MSCEIT, Bar-On's EI Inventory (EQ-i), SREIS, the Revised NEO Personality Inventory, the Positive and Negative Affect Schedule, The Wechsler Abbreviated Scale of Intelligence (WASI), and the Beck Depression Inventory (BDI). They found the MSCEIT was discriminable from personality and well-being variables, but the two self-report measures of EI, EQ-I and the SREIS, shared significant variance with personality and well-being variables. The MSCEIT and SREIS significantly correlated ( $r = .32$ ;  $p = .011$ ). The MSCEIT did not correlate with the EQ-i ( $r = .11$ ;  $p = .379$ ), but the EQ-I and SREIS were highly correlated ( $r = .50$ ;  $p < .01$ ). The researchers admitted one limitation was their low sample size and called for more research to examine self-report and performance-based EI measures with intelligence measures.

*Discriminant validity.*

Discriminant validity examines the degree to which the MSCEIT is not similar to other constructs to which it should not be similar (Trochim, 2001). Several studies examined the MSCEIT with other personality tests including the Big Five (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) to examine discriminant validity and found the MSCEIT distinguishable (Brackett & Mayer, 2003; Iliescu et al., 2013). Brackett et al. (2004) found that the MSCEIT scores were modestly correlated with just two Big Five dimensions (Agreeableness and Intellect) and had low correlation with verbal SAT scores ( $r = 0.35$ ) and a much lesser extent with college GPA.

The researchers concluded that the MSCEIT demonstrated discriminant validity: The MSCEIT “taps information about individual differences not contained in the Big Five or measures of academic achievement” (p. 1393).

Eack et al. (2010) examined the discriminant construct validity of the MSCEIT by estimating the relationship of the MSCEIT with demographic characteristics, general cognitive function, and psychopathology. The researchers found that the MSCEIT did possess some discriminant construct validity and that the demographic, clinical, and cognitive correlates did not contaminate the social-cognitive assessments.

*Factor structure.*

The factor structure of a test indicates the number of specific entities it plausibly measures (Brackett & Salovey, 2006). With the MSCEIT, the factor structure “indicates how many dimensions of the EI is picking up one unified dimension, two dimensions, corresponding to the two areas, four dimensions corresponding to the four-branch theoretical model” (Brackett & Salovey, 2006, p. 37).

Mayer et al. (2003) performed confirmatory factor analysis on the eight tasks measured by the MSCEIT using one, two, and four factor models. Their sample consisted of 2,112 participants from 36 separate academic settings from several countries. Mayer et al. found a progressively better fit of models from the one factor to the four-factor solution, but all models fit fairly well (.40 to .77). The researchers concluded that the best fit was the four-factor solution (.55 to .77).

Two studies in Canada examined the scores of the MSCEIT and used confirmatory factory analysis to examine the theoretical model. Day and Carroll (2004) studied the MSCEIT scores of 246 undergraduate students from a Canadian university

and used a confirmatory factor analysis to compare the fit of the two-factor model to the four-factor model. The researchers found that both models fit the data equally well so they used the four-factor model because it was theoretically driven. Livingstone and Day (2005) recruited 211 military personnel to take the MSCEIT, EQ-I, Personal Characteristics Inventory, Canadian Forces Aptitude Test, the Revised Self-monitoring Scale, Job Satisfaction Scale, and a Life Satisfaction scale. They concluded the four-factor of the MSCEIT fit well.

Other research studies using the theoretical model of the Mayer-Salovey-Caruso Ability EI Model with the MSCEIT showed partial support or lack of support for the four-factor model (Brannick et al., 2011; Eack et al., 2010; Fan, Jackson, Yang, Tang, & Zhang, 2010; Follesdal & Hagtvet, 2009; Gignac, 2005; Keele & Bell, 2008; Maul, 2011, 2012a); Palmer et al., 2005; Roberts et al., 2006; Rossen et al., 2008). The researchers concluded that more research was needed to address the validity concerns of the MSCEIT. Part of the concern with the above studies using factor analysis was the low sample sizes (Brannick et al., 2011; Eack et al., 2010; Keele & Bell, 2008; Maul, 2011; Roberts et al., 2006; Rossen et al., 2008). Sample sizes to run factor analyses must be large (Burns & Grove, 2001). Even among the studies with large numbers only partial or lack of support was discovered: Fan et al. - 10, 573 participants, Gignac - 1, 985 participants, Maul - 707 participants, Mayer et al. - 1,985 participants, and Palmer et al. - 450 participants (Fan et al, 2010; Gignac, 2005; Maul, 2012a ; Mayer et al., 2003; Palmer et al., 2005) with two using the same data to run statistics (Gignac, 2005; Mayer et al., 2003).

*Validity of the MSCEIT in nursing studies.*

Nursing studies using the Four-Branch Ability Model of EI and the MSCEIT noted that the MSCEIT was valid in their introductions citing other studies and further addressed validity concerns by correlating the MSCEIT and other performance measures (Beauvais, Brady, O'Shea, & Griffin, 2011; Codier, Kooker, & Shoultz, 2008; Codier, Kamikawa, Kooker, & Shoultz, 2009). Beauvais et al. (2011) used a descriptive correlational design with 87 nursing students to examine the relationship between EI (measured with the MSCEIT) and nursing performance (measured with the Six Dimension Scale of Nursing Performance). The researchers noted that the MSCEIT demonstrated face validity (tasks used by MSCEIT to measure EI) because of the study by Mayer et al. (2000) and content validity was demonstrated by the MSCEIT's depiction of the Four-Branch Ability Model (Mayer et al., 2000). The researchers also noted that Brackett and Mayer (2003) demonstrated convergent, discriminant, and incremental validity with the MSCEIT. Beauvais et al. (2011) found that four of the six subscales of the Six Dimension Scale of Nursing Performance (teaching/collaboration, planning/evaluation, interpersonal relations and communication, and professional development) were significantly correlated with total emotional intelligence scores.

Codier et al. (2008) and Codier et al. (2009) measured EI using the MSCEIT in clinical settings and correlated EI with nursing performance levels measured by whether the nurse was on the clinical ladder or not. Codier et al. (2008) had 36 participants while Codier et al. (2009) had 193 participants. Codier et al. (2008) found significant positive correlations between clinical performance level and EI scores. Codier et al. (2009) found

three subscales to correlate significantly with performance: managing emotion, experiencing emotional intelligence, and using emotions to facilitate reasoning.

*Summary of measurement concerns with the MSCEIT.*

A wide reading of studies on EI have suggested variability in the reliability and validity of the Four-Branch Ability Model of EI (Brackett & Mayer, 2003; Day & Carroll, 2004; Gignac, 2005; Illiescu, Ilie, Ispas, & Ion, 2013; Mayer, Salovey, Caruso & Sitarenios, 2003; Ruiz-Aranda, Extremera, & Pineda-Galan, 2013; Webb et al., 2013). Matthews et al. (2002) criticized the Four-Branch Ability Model of EI and stated, “there is no general ability for learning how to process emotional material that could support EI” (pp. 281-282). The authors acknowledged concerns about determining whether EI was a measurable quality of the human organism, and stated that this was “pivotal to a scientific account of the construct” (p. 32). They advocated for the concept of EI to be called “emotional competence” because it “could be accommodated inside the theory of fluid and crystallized intelligence” (p. 130). However, after further studies, in 2010 Roberts et al. concluded that the ability model of EI, exemplified by the four-branch hierarchical model, was “scientifically plausible and practically meaningful” (p. 834). In the 2012 copy of *Emotion Review*, Maul (2012b; 2012c), MacCann, Matthew, and Roberts (2012), and Mayer and Salovey (2012) responded to each other’s articles on the Four-Branch Ability Model of EI. Maul (2012a; 2012b; 2012c) had consistently criticized the Four-Branch Ability Model of EI as discussed earlier concerning validity and factor structure as well as types of questions and scoring methods. Mayer and Salovey (2012) responded to Maul’s (2012c) criticisms about theoretical clarity and addressed the test construction



rationales for landscapes and designs as well as clarified concerns about each of the branches.

In the *User's Manual* of the MSCEIT, Mayer et al. (2002), described the normative sample of the MSCEIT. The authors stated that the MSCEIT was a compilation of data from three samples from over 50 research sites from diverse geographic locations that made up the normative base of 5000 respondents. The sample size was large and included reasonable samples for each age, gender, ethnic, and education group (Mayer et al, 2002). The authors matched the normative sample demographics to United States census data and computed MSCEIT norms on a weighted scheme so the normative values of the MSCEIT would properly reflect the demographic distribution of the United States. The authors also found that favorable reactions from respondents from different countries lent support to the applicability of the MSCEIT internationally.

The MSCEIT has both general and expert consensus scoring methods (Mayer et al., 2002). The authors explained that the general consensus method utilized the entire normative sample of 5000 to score item responses. Each response would receive a percentage of the correct score (e.g. if 60% of the norm sample selected "A" as their answer choice, the response of "A" would yield a score of .60 for that item). The expert sample's scoring would be the same, but a sample of 21 emotion experts (members of the International Society for Research in Education – ISRE) was used to formulate the scores. The authors correlated the general consensus and expert scoring methods and found .90 for version 2 data and .88 for version 1 data of the MSCEIT.

Maul (2012b) criticized the scoring method using the expert and consensus scores. He argued that just because the 21 experts studied emotions did not “guarantee the possession of emotional intelligence any more than the formal study of biomechanics guarantees physical health” (p. 411). Maul (2012b) further argued, “emotions are not defined solely by their consensual use and interpretation” (p. 396) and that consensus did not define correctness. Maul (2012b) concluded that Mayer & Salovey had not provided compelling evidence that expert or consensus data identified correct answers, so the validity argument was not sufficient.

The authors of the Four-Branch Ability Model of EI, Mayer, Salovey, and Caruso, have performed research, written articles, and published a user’s manual (2002) on the MSCEIT for the past twenty years. They maintain that the Four-Branch Ability Model of EI is a sound theoretical model and the MSCEIT is a reliable and valid instrument to measure EI. Researchers using the MSCEIT would agree (Brackett et al., 2004; Brackett & Salovey, 2006; Day & Carroll, 2004; Iliescu et al., 2013; Papadogiannis, Logan, & Sitarenios, 2009). Still other researchers have criticized the MSCEIT’s reliability and validity issues and called for more research (Brannick et al., 2011; Eack et al., 2010; Fan et al., 2010; Follesdal and Hagtvet, 2009; Gignac, 2005; Keele and Bell, 2008; Maul, 2011; Maul 2012a; Maul, 2012b; Maul, 2012c; Palmer et al., 2005; Roberts et al., 2006; Rossen et al., 2008). Nevertheless, a relatively new construct, EI, needs more research to add to the scientific knowledge base of EI.

***Reliability and validity of the SREIS.***

The SREIS was developed by Brackett et al. (2006) to be used in three studies with the MSCEIT. The researchers wanted to examine the relationship of emotional

abilities and social behaviors which are expected to influence the quality of relationships. The researchers examined and amended items from other tools in literature such as the Trait Meta-Mood Scale (TMMS) (Salovey, Mayer, Goldman, Turvey, & Palfia, 1995 as cited in Brackett et al., 2006) and the self-report measure of EI by Schutte et al. (1998). The researchers wrote items that covered all four EI domains adequately such as taking an item from TMMS, “By looking at their facial expression, I recognize the emotions people are experiencing” because it mapped onto the perception of emotion domain on the MSCEIT (Brackett et al., 2006, p. 783). Brackett et al. (2006) wrote additional items for the SREIS so that all domains of the MSCEIT would be covered. The researchers had 10 graduate students who were familiar with the Mayer and Salovey’s 1997 Four-Branch Ability model of EI rate the content validity of the SREIS. If an item had less than 75% agreement, the item was dropped from the SREIS scale. The resulting SREIS scale contained 34 items with nine items for perceiving emotion, eight for using emotion, eight for understanding emotion, and nine for managing emotion. The researchers then performed a preliminary factor analysis using a principal axis with oblique rotation, which suggested that the four-factor solution was optimal. After examining factor loadings on unintended factors and loadings below .30, the researchers dropped nine more items. The final SREIS for the first study had six items for perceiving, using, and managing emotion domains and four items for the understanding emotion domain. The researchers computed a total EI by averaging across the scales and found part-whole correlations between the four dimensions scores:  $r_s(287) = .57$  to  $.78$  and the full scale was reliable at alpha  $.84$ . In the first study, the researchers had the participants take the SREIS before and after the MSCEIT and computed two total scores by averaging the

responses across the domains and comparison groups. The results of the study are discussed later in this chapter.

In the second study, Brackett et al. (2006) used a revised 19-item SREIS to correct for ambiguous statements from the original SREIS to represent the MSCEIT more accurately. The researchers performed a confirmatory factor analysis with the revised SREIS, which supported both the one- and four- factor solutions. The revised SREIS had a Cronbach's alpha of .77. In the third study, the researchers used the revised SREIS again to assess perceived EI and that time the Cronbach's alpha was .66.

Brackett et al. (2006) used both the MSCEIT and the SREIS tools to examine the relationship between EI and social functioning in three studies. In the first study the researchers compared 291 college students' MSCEIT scores with the students' SREIS scores and found that the two scores were not strongly related. In the second study the researchers tested 355 undergraduate students comparing the results of the MSCEIT and a revised SREIS along with other personality measures. The researchers found that the MSCEIT and SREIS scores were unrelated. The third study aimed to assess whether or not the MSCEIT and SREIS predicted observable behaviors in a social encounter. The researchers studied 50 college students and found that only the MSCEIT predicted real-time social competence.

The SREIS has been used in other studies and found to have acceptable reliability (Dunn et al., 2007; Hoerger, Chapman, Epstein & Duberstein, 2012; Kidwell et al., 2011). Dunn et al. (2007) used both the MSCEIT and the SREIS to examine if there was a relationship between affective forecasting (accurate forecasts about affective responses to future events) and EI in college students. Findings indicated that high-EI individuals

measured by the MSCEIT but not the SREIS showed greater affective forecasting accuracy. The SREIS showed acceptable reliability: Alpha was .84. Hoerger et al. (2012) studied college students and found that EI was associated with predicting, encoding, and consolidating emotional reactions with the SREIS's alpha to be .83. Kidwell et al. (2011) conducted three field studies to examine the impact of EI in marketing exchanges on sales performance and customer relationships. The researchers used the MSCEIT and the SREIS to develop a scale to identify unique emotional abilities that help people be more effective in marketing exchanges. The SREIS and the newly developed tool, the EI Marketing Exchange Scale (EIME), showed discriminant validity and the SREIS's alpha was .77 in the second study.

Webb et al., (2013) replicated and expanded previous research on EI measures and studied 65 participants in the Boston area who took the MSCEIT, Bar-On's EI Inventory (EQ-i), SREIS, the Revised NEO Personality Inventory, the Positive and Negative Affect Schedule, The Wechsler Abbreviated Scale of Intelligence (WASI), and the Beck Depression Inventory (BDI). The SREIS was significantly correlated with Verbal IQ, but not performance or Full Scale IQ. The MSCEIT and SREIS did not significantly correlate ( $r = .32; p = .011$ ), but the EQ-I and SREIS were highly correlated ( $r = .50; p < .01$ ).

Roberts et al. (2010) expressed concerns about using self-report tools because of possible bias and distortions. Self-report questionnaires can be vulnerable to distortion such as answering the questions a certain way in order to obtain a job (Christiansen et al., 2010; Day & Carroll, 2007; Grubb & McDaniel, 2007). Self-report EI measures (e.g. SREIS) and ability or performance-based EI (e.g. MSCEIT) have been compared

empirically (Deepa & Krishnaveni, 2008; Goldenberg et al., 2006). Differences between the two types of measures included: (1) Performance measures assessing a person's performance on a task directly versus self-report measures could be vulnerable to social desirability motives; (2) Performance measures tended to reflect actual levels of EI functioning versus self-report measures perceived EI levels (perceived answered based on perception not ability); (3) Performance measures were independent of personality and temperament measures versus self-report measures overlapped with personality factors; and (4) Performance measures were costly for research versus self-report were inexpensive and easy to administer.

Webb et al. (2013) examined self-report EI measures (SREIS and EQ-I) versus performance-based measures (MSCEIT). They found that the two self-report measures (SREIS and the EQ-i) which cover different content were more correlated than the MSCEIT and SREIS which were designed to cover the same content. The researchers interpreted these findings as the effect of shared method variance (self-report versus the MSCEIT's performance-based method) and the concern that self-report measures are limited by people's ability to accurately assess and report on EI. Webb et al. also acknowledged that due to their small sample size, 65, statistical power was limited and affected the generalizability of their findings. They called for more research studies to directly compare competing EI measures' psychometric characteristics.

Both the SREIS (self-report) and MSCEIT (ability or performance-based) review of literature have presented a relatively new construct, EI, with mixed research support for reliability and validity. More research is needed to address reliability and validity concerns of the SREIS and MSCEIT with a new population, PMHN.

**Emotional intelligence and the nursing shortage.**

Researchers have recognized that the nursing shortage is problematic and complex, and acknowledged that more research is needed to understand why nurses leave clinical practice (Banks & Bailey, 2010; Bowles & Candela, 2005; MacKusick & Minick, 2010). Substantial evidence exists about factors that involve registered nurse retention, but factors specific to new registered nurse retention is not as abundant (Morrow, 2009; Pelico, Djukic, Koyner, & Brewer, 2009). New graduate nurses have even been called a “marginalized and disenfranchised population” (Morrow, 2009, p. 280). Research has demonstrated that 61.5% of new nurses intended to quit the job they held in nursing and look for another job in nursing, but 12.6% of new nurses intended to quit the nursing profession (Lavoie-Tremblay et al., 2008). Lavoie-Tremblay et al. called for more research to look at the behaviors of new nurses and to address how to improve working conditions.

Landa and Lopez-Zafra (2010) reported that nursing professionals have lower levels of stress in their work when they have clear feelings about their emotions and situations that occur, and are capable of dealing with these emotions. Bowles and Candela (2005) also examined stress in nurses and found that the vast majority of recent RN graduates believed their work environment was stressful and not favorable to providing safe patient care and 30% of the sample left their first jobs within a year.

Some of the nursing shortage studies have looked at the specialty of psychiatric mental health nurses (PMHN) (Bryan, 2007; Gerits et al., 2005). Bryan (2007) did her masters thesis on the relationship of EI and self-efficacy in professional nurses working in the field of psychiatric–mental health using the Work Place Questionnaire Emotional

Intelligence Version (WPQei) in Goleman's model. The sample was 57 nurses with slightly above average EI. She found that nurses with greater self-efficacy had higher EI scores and nurses over 55 years old had greater self-efficacy and EI scores than younger nurses. According to Bryan, EI training could benefit nursing schools and nursing employers. Gerits et al. (2005) studied 350 nurses caring for clients with mental retardation and severe behavior problems in the Netherlands using Bar-On's model. The researchers found that female nurses with relatively high EI profiles reported the fewest symptoms of burnout.

Warelow and Edward (2007) proposed fostering the concepts of resilience and EI to assist PMHN to transform negative experiences into positive, self-enhancing experiences. They advocated using resilience and EI skills to have positive implications in the recruitment and retention of PMHN.

The review of literature on the nursing shortage and especially new graduates demonstrated complex problems. More research is needed to understand why nurses leave clinical practice. EI skills were shown to have positive implications for recruitment and retention of nurses

### **Emotional intelligence and nursing.**

While numerous nursing studies, articles, and books have examined the concept of EI, gaps in the literature reveal a lack of consensus about the meaning and definition of EI in nursing (Akerjordet & Severinsson, 2007; Smith, Profetto-McGrath, & Cummings, 2009), a lack of a consistent model/theory of EI in nursing studies (Codier, 2010), and the lack of an effective instrument to measure EI (Akerjordet and Severinsson, 2010; Feather, 2009). Researchers may use different theoretical approaches to study EI, but agreed that



EI involved emotional awareness and emotional management (Akerjordet & Severinsson, 2007).

*Nursing practice.*

Nursing researchers have found a positive relationship between nursing performance and EI (Beauvais et al., 2011; Codier et al., 2008) with EI being “crucial for effective patient care, team relationships, organizational effectiveness, and self-care” (Codier et al., 2011, p. 183). Recent nursing graduates ranked items from the EI scale as most important to account for successful early career performance (Rochester et al., 2005).

Nurses in clinical practice have reported that EI is an important part of their nursing practice (Davies, Jenkins, & Mabbett, 2010; Kooker et al, 2007). EI has been reported to have a positive relationship with nursing performance (Codier et al., 2009; Codier et al., 2008), affect ethical behavior of nurses (Cabral & Carvalho, 2014; Deshpande & Joseph, 2009; Mesmer-Magnus et al., 2010; Singh, 2011), and useful to incorporate in handling conflict in the nursing work environment (Morrison, 2008).

Carroll (2005) polled 169 nurse executives and other women leaders to determine what leadership skills and attributes women would need in the 21<sup>st</sup> century in order to succeed. She identified six factors, one of which was people skills (including empowering others, valuing diversity, and working collaboratively). Recent nursing graduates agreed and rated the capabilities that were most important for successful nursing practice to be social and personal emotional intelligence (Rochester et al., 2005).

Nursing leadership and management have been a rich source of EI in nursing literature as early as 1996 (Kerfoot, 1996). Researchers continue to advocate for the

importance of EI development in nursing leaders (Kerfoot, 1996; Vitello-Cicciu, 2002; Vitello-Cicciu, 2003; Wright, 2009;) and in interdisciplinary work (McCallin & Bamford, 2007). Kerfoot (1996) saw the value of EI for a nurse leader moving beyond the technical side of work to the higher levels of addressing the emotional demands of the job. Vitello-Cicciu (2002) built on Kerfoot's ideas of the importance of EI in nursing leadership but advocated caution in the importance of how to use and define EI and preferred the ability model of EI. Taft (2006) stated that there was clear evidence of the importance for nursing leaders to possess the ability to understand their own emotions as well as understand and relate well to others. Surveyed nurse executives preferred applicants who had EI qualities (i.e. team oriented, independent, and organized) and 80% admitted they had removed nurses from management positions when EI qualities were lacking (Connolly, 2002).

McQueen (2004) analyzed published studies of EI and emotional labor to determine if EI was valuable to the nursing profession. She found that management of emotions was required to have successful interactions which involved showing understanding of others as well as influencing feelings of others whether they were patients or colleagues. She concluded that EI was not only important in relationships, but in work performance as well.

A study of published literature conducted by Feather (2009) found that more research was needed on the development of EI among nursing leaders and job satisfaction among nursing staff. Additionally, Feather suggested an effective instrument for measurement of EI was needed. Akerjordet and Severinsson (2010) found that EI definitions were varied with unresolved psychometric and measurement issues (Matthews

et al., 2002; Smith et al., 2009); they called for further exploration of EI in nursing leadership.

Mae Taylor Moss (2005) wrote a book entitled, *The Emotionally Intelligent Nurse Leader*, using Mayer, Salovey, and Caruso's 1997 definition of EI. For Moss (2005) emotional ability was related to leadership styles. With the current health care environment changing to more of a collaborative relationship between leaders and followers (versus unilateral approach in the past), Moss recognized that team interactions depended on emotional skills for problem solving and conflict management. She advocated that nurse leaders use "intelligent creating, sharing a vision, and setting an example" which are facilitated by emotions (pp. 66-67).

The review of literature of EI and nursing practice demonstrated positive feedback about EI and the usefulness and benefits to nursing practice. The lack of a consistent definition and theory of EI demonstrated the need for more studies on EI.

#### ***Nursing education.***

Nurse educators and researchers maintained that EI was necessary for recruitment in nursing (Cadman & Brewer, 2001) and an important skill to train nursing students (Beauvais et al., 2011; Bellack, 1999; Fernandez et al., 2012; Landa & Lopez-Zafra, 2010; Landa et al., 2009; Por, Barriball, Fitzpatrick, & Roberts, 2011; Rochester et al., 2005). EI has also emerged as a significant predictor of nursing students' academic achievement (Fernandez et al., 2012) and performance (Beauvais et al., 2011). EI is both necessary and desirable as well as an important concept to add to nursing curricula because nursing is both a relationship-intense and service-based profession (Bellack, 1999).

Nurse educators have written about the importance of EI in nursing curricula (Bellack, 1999; Beauvais, 2012; Cadman & Brewer, 2001; Freshwater & Stickley, 2004; McQueen, 2004). Bellack (1999) called for nurse educators to demonstrate personal and social competence (her definition of EI) with nursing students and then expect students to demonstrate the same. Bellack (1999) encouraged nurse educators to teach and integrate competencies associated with emotional intelligence throughout nursing curricula. Cadman and Brewer (2001) believed that emotionally intelligent nurses could promote clinical efficiency and professional readiness and that shaping feelings counted as much as thought in the process of decisions and actions. Freshwater and Stickley (2004) discussed the importance of nursing as an art and argued that it was possible to measure and learn EI skills. The authors believed that EI skills differentiated exceptional ability and achievement from mediocre. The authors also advocated for the balance between teaching nursing skills and emotional skills in nursing education because the value and development of emotions was essential to the art of nursing. McQueen (2004) advised that self-awareness, self-regulation, and social skills be included in nursing programs. She believed that patients and employers as well as nurses would benefit from improved EI skills and decreased psychological stress.

Beauvais et al. (2011) based her study of nursing students on the Four-Branch Ability Model of EI. EI was measured using the MSCEIT, and nursing student performance was measured using the Six Dimension Scale of Nursing Performance. They found that EI was directly related to nursing student performance. The researchers discussed the importance of adding EI components into nursing education and practical ways to accomplish curricula changes. Beauvais et al. stated:

In a profession where nurses are required to make numerous decisions on a daily basis, some of which are life-and-death decisions, the incorporation of both emotional and intellectual data into our decisions-making will afford us the potential to improve both nursing performance and patient outcomes. (2011, p. 400)

The education of EI in nursing is necessary to prevent occupational stress and its impact on students' health (Landa & Lopez-Zafra, 2010; Montes-Berges & Augusto, 2007). Por et al. (2011) explored the relationship of EI and perceived stress, coping strategies, subjective well-being, perceived nursing competency and academic performance and found that EI was positively related to well-being, problem-focused coping, and perceived nursing competency, but negatively related to perceived stress.

Nurse educators of psychiatric mental health students also recognized the importance of teaching self-awareness and explained how having students artistically paint could facilitate students' exploration of themselves in relationship to their patients in clinical practice (Warne & McAndrew, 2008). Akerjordet and Severinsson (2007) acknowledged the importance of self-awareness in their literature review of EI, and noted that EI research was scarce and in the developmental stage.

Van Dusseldorp et al. (2010) used the Bar-On Emotional Quotient Inventory with a cross-sectional research design to gain insight into the level of EI among mental health nurses in the Netherlands. The researchers recommended that developing and training EI be incorporated into nursing curricula to benefit therapeutic relationships in later professional life and improve better outcomes of nursing care.

The studies reviewed on nursing students and EI used the ability and trait models of EI (Altuntas & Akyil, 2011; Beauvais, Brady, O'Shea, & Griffin, 2011; Benson, Ploeg, & Brown, 2010; Fernandez, Salamonson, & Griffiths, 2012; Jenkins, 2006; Landa, Lopez-Zafra, Augilar-Luzon, & de Ugarte, 2009; Millan, 2008; Por, Barriball, Fitzpatrick, & Roberts; Shanta, 2007). The importance of teaching EI skills in nursing education was clear. Because of the importance of preparing nurses for a profession that emphasizes relationships and service, researchers and nurse educators advocated for EI to be added to nursing curricula.

### *Nursing research.*

Numerous nursing research articles have focused on EI (Akerjordet & Severinsson, 2004; Bryan, 2007; Budnik, 2003; Carson, Carson, Fontenot, & Burdin, 2005; Codier, 2006; Codier, Kooker, & Shoultz, 2008; Cummings, Hayduk, & Estabrooks, 2005; Deshpande & Joseph, 2009; Farmer, 2004; Gerits, Derksen, Verbruggen, & Katzko, 2005; Humpel & Caputi, 2001; Jenkins, 2006; Kooker, Shoultz, & Codier, 2007; McCallin & Bamford, 2007; Montes-Berges & Augusto, 2007; Morrison, 2008; Rochester, Kilstoff, & Scott, 2005; Vitello-Cicciu, 2001; Welch, 2005; Willard, 2006). Akerjordet and Severinsson (2007) considered EI to be an important nursing concept. The authors encouraged future nursing research to use different approaches to study EI in order to develop a foundation that was theoretical, empirical, and philosophical with an emphasis on personal qualities important to nursing practice. To determine the best methods to teach EI in nursing programs, McQueen (2004) recognized that further research was necessary to answer questions about the use of EI in recruitment and nursing curricula.

Smith et al. (2009) examined thirty-nine nursing studies in their literature review of EI in nursing. The authors concluded that although the literature they reviewed revealed that EI concepts were accepted in nursing, it showed a lack of consensus about the meaning of EI. The authors recommended that nurses articulate a definition of EI in relation to nursing.

Harper and Jones-Schenk (2012) recognized that EI was not a brand new construct and found over three million results from a web search. The researchers explained that their overall focus was determining whether selection of students for a baccalaureate nursing program could be enhanced by identification of EI traits. The researchers found that staff nurses' mean scores for EI were all in the average range and a negative correlation occurred between age and empathy. The researchers acknowledged that the variability of the results in comparison to other nursing research studies might have been due to different instruments and diverse conceptual frameworks of EI.

### **Emotional intelligence and healthcare.**

EI has been evident in patient-centered care in dental students, medical students, mental health workers, and faculty and residents in an academic family medicine department (Birks & Watt, 2007). Longo, Dean, Norris, Wexner, and Kent (2011) examined nurse retention concerns and advocated the importance of healthy work environments. The Healthcare Workforce Partnership (HWP), an interdisciplinary community collaboration, was formed to promote and strengthen nursing and other health professions (Longo et al., 2011). The HWP recognized that increased stress among health care professionals could affect patient safety, so they focused on two factors that contributed to healthy work environments: collaboration and communication. Longo et

al. (2011) described the process of how the HWP addressed risks to collaboration and communication. The HWP sponsored a conference, “Transforming Behaviors to Build and Sustain a Culture of Safety in Healthcare” which included topics on EI, relationship-building, generational differences, cultural competency, health literacy, and horizontal violence. Longo et al. (2011) described the follow-up evaluation process that further emphasized the importance of involving the entire healthcare community to improve the culture of healthcare for the benefit of patients. EI was not defined by the HWP, so it was unclear what theory of EI was used.

Birks and Watt (2007) conducted a review of the literature on EI and healthcare. The authors found six empirical studies with the majority of EI literature being editorials and opinion pieces. The authors found it difficult to come up with a definition of EI because of the variety of terms used in the literature to describe EI. The authors also acknowledged that EI was showing promise to improve patient-centered qualities of health care professionals. The authors’ review advocated that five broad areas of investigation needed to be explored in future research:

1. What do we [healthcare professionals] measure when we measure EI?
2. How do we [healthcare professionals] measure EI and when?
3. Do levels of EI in health professionals make a direct difference to patient outcomes?
4. Does EI have an impact on the health professional and their working environment?
5. To what extent can EI be developed or taught? (pp. 372-373)



Faguy (2012) acknowledged that the concept of EI was still evolving, but characterized EI in healthcare as, “Paying attention to emotions, understanding them, and using them wisely can help us lead better lives, both personally and professionally” (p. 237). Birks, McKendree, and Watt (2009) investigated whether EI and stress differed among dental, nursing, graduate mental health workers, and medical students. The researchers used the Schutte EI test (Schutte et al., 1998) and found that students from the different health professions did not show significant differences in EI.

Gaps in the literature on healthcare and EI revealed a need for more research that longitudinally examines EI in healthcare professionals, more research to link EI to organizational performance, and more research to link EI to recruitment of health professions to training programs or jobs (Birks & Watt, 2007). EI is an important concept in healthcare to foster the definition and implementation of EI strategies to promote healthy outcomes for patients in the constantly changing healthcare environment.

### **Summary of Chapter Two**

Although there are different definitions and models of EI (Mayer et al, 2008), the Four-Branch Ability Model of EI proposes a systematic way to understand how emotions can affect the daily relationships of people. Both the MSCEIT and the SREIS are EI measuring tools that are based on the Four-Branch Ability Model of EI (Brackett et al., 2006; Mayer et al., 2004). The review of literature demonstrated a wide variety of research studies that both maintained and refuted the reliability and validity of the MSCEIT and the SREIS. More research is needed to address reliability and validity concerns of the SREIS and MSCEIT with a new population of nurses, PMHN, who have had limited EI research studies conducted in the United States. This study compared the

EI scores of PMHN in the United States to the 5000 individuals on which the MSCEIT was normed, examined the internal consistency reliability of the MSCEIT and SREIS, and examined convergent validity of the MSCEIT and SREIS.

The review of literature on the nursing shortage revealed complex origins and prompts more research to understand why nurses leave clinical practice. EI skills were shown to have positive implications for recruitment and retention of nurses (Gerits et al., 2004; Landa and Lopez-Zafra, 2010).

The review of literature of EI and nursing practice demonstrated positive feedback about EI and the usefulness and benefits to nursing practice. The lack of a consistent theory of EI and lack of consistent definition of EI demonstrated the need for more studies on EI. The importance of teaching EI skills in nursing education was clear. Because of the importance of preparing nurses for a profession that emphasizes relationships and service, researchers and nurse educators advocated for EI to be added to nursing curricula.

EI is a relatively new construct that emphasizes effective communication skills that psychiatric-mental health nurses (PMHN) can use to enhance their previous educational experiences. PMHN work in a variety of settings with individuals who are challenged emotionally. PMHN need EI strategies to learn more effective ways to build therapeutic relationships and more tools to help their patients cope with distressing and frustrating manifestations of their mental disorders. More research is needed to examine ways the Four-Branch Ability Model of EI and its tools can be used in healthcare settings to benefit the personnel and enhance positive patient care outcomes.

## CHAPTER THREE

### Overview of Study

The Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence (EI) proposes that a person's thinking can be more intelligent if the person recognizes the value of perceiving, using, understanding, and managing emotions and uses this information to enrich cognitive processes (Brackett et al., 2006). No profession recognizes the need for these values more than that of psychiatric-mental health nurses (PMHN) whose practice is often guided by Hildegard Peplau's theory of Interpersonal Relations in nursing (Peplau, 1952). It is through Peplau's theory that PMHN initiate and maintain therapeutic relationships with their patients. The Four-Branch Ability Model of EI supports Peplau's theory and provides a systematic and intentional framework for studying the role of emotional abilities in relationships by explaining the cognitive and emotional components (Brackett et al., 2006). The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the MSCEIT and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the SREIS scores (total and branch).

The study used Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI as conceptual frameworks to guide

research. Two instruments were used in the study: the MSCEIT and the SREIS. Both instruments are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of EI (Brackett et al, 2006; Mayer et al., 2004); however, they differ in accessibility, cost, feasibility of use, and method of measurement (performance versus self-report). To consider adoption of EI assessments for identifying PMHN strengths and challenges, accessible, affordable, feasible, reliable and valid EI tools are needed.

The review of literature described a wide variety of studies that differed on the reliability and validity of the MSCEIT and the SREIS. More research is needed to address reliability and validity concerns of the MSCEIT and SREIS with a new population of nurses, PMHN in the United States, for whom limited EI research has been published. The review of literature demonstrated positive correlations between nursing (practice, education, and research) and healthcare with EI. This study compared the EI scores of PMHN in the United States to the 5000 individuals on which the MSCEIT was normed, examined the internal consistency reliability of the MSCEIT and SREIS, and examined convergent validity of the MSCEIT and SREIS. This chapter describes the design and methods of the study.

## **Methodology**

### **Methods and design.**

A descriptive correlational design was used to examine the comparison of PMHN's EI scores on the MSCEIT to the sample on which the MSCEIT was normed, the reliability of the MSCEIT and SREIS tests, the comparison of PMHN's total and branch scores on the MSCEIT and SREIS, and to use demographic data to describe nurses from three psychiatric nursing associations: American Psychiatric Nurses Association

(APNA), International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG). The descriptive correlational method was chosen for several reasons. First, the purpose of the study was to test the internal consistency reliability of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS), and to determine if there was a relationship (convergent validity) between the PMHN MSCEIT scores (total and branch) and the PMHN scores of self-awareness of EI skills using the Self-Rated Emotional Intelligence Scale (SREIS) - total and branch. Second, a descriptive and correlational design fit this study well because the design examined and described differences in variables in two or more groups occurring in natural environments. Third, no manipulation of any of the variables and no attempt to establish causality was used, so a descriptive design was the best choice (Burns & Grove, 2001).

#### **Classification and description of the variables.**

The variables that were collected and analyzed were demographic (describe sample) and total and branch scores from the MSCEIT and SREIS to examine reliability of the tests and to test convergent validity of the constructs of the MSCEIT with those of the SREIS. The variables are described in detail in the following section.

#### ***Demographic variables to describe the sample.***

1. Age
2. Gender
3. Race
4. Country of citizenship (United States or “not”)

5. Educational level
6. Type of nursing license
7. Years worked as a psychiatric nurse
8. Years worked in current primary psychiatric facility or retired or not working in psychiatric setting

Gender, race, educational level, type of nursing license, and country of residence were organized as categorical variables in the form of grouped frequency distributions. The review of literature revealed limited data on PMHN's EI scores in the United States, so the country of citizenship was grouped as "United States" or "not". The term "country of citizenship" was used to distinguish in the data analysis both participants who are here in the United States studying but plan to return to their own country after their education is completed and those PMHN living in other countries versus PMHN living in the United States. Years worked as a psychiatric nurse and years worked at current primary psychiatric facility were continuous variables and organized in groups in a frequency distribution consistent with other nursing studies (Codier et al, 2009; Codier et al, 2008). Actual age scores were collected. A category for "retired" was added as a choice for "years worked at current primary psychiatric facility" question because some of the participants may have already retired but remained active members of the psychiatric nurses' association. Another category "not currently working in a psychiatric setting" was also added because some participants may not have been working at the time of the study in psychiatric nursing, but were still members of a psychiatric nurses' association or receive an e-mail from a member of one of the associations.

***Correlational variables with definitions.***

The total and branch scores of the MSCEIT and SREIS were correlated to examine correlation and convergent validity. The conceptual and operational definitions of EI were addressed.

*Conceptual definition of EI.*

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. (Mayer & Salovey, 1997, p. 10)

*Operational definition of EI:*

1. EI was operationalized and measured using two instruments: MSCEIT and the SREIS EI scores on the MSCEIT. The following variables were taken from the MSCEIT and SREIS:
  - a. Total score
  - b. Branch scores
    - (1) Perceiving emotions
    - (2) Using emotions
    - (3) Understanding emotions
    - (4) Managing emotions
2. EI scores on the SREIS
  - a. Total score
  - b. Branch scores
    - (1) Perceiving emotions

- (2) Using emotions
- (3) Understanding emotions
- (4) Managing emotions

### **Procedures for Collection and Treatment of Data**

Step-by-step data collection procedures and data analysis are explained in the next section. Consent and participation forms are described.

#### **Preliminary Procedures.**

##### ***Online Survey.***

The online survey was uploaded so demographic data could be collected and the responses of participants to 19 questions of the SREIS. The demographic data were loaded (age, gender, race, education level, type of nursing license, country of residence, years worked as a psychiatric nurse, and years worked at the present mental health facility or retired or currently not working in a psychiatric setting) and the 19 questions of the SREIS tool asking the participants to answer on a 5-item Likert scale (very inaccurate, moderately inaccurate, neither nor, moderately accurate, and very accurate) for each question.

##### ***Student Research Discount for MSCEIT.***

The MSCEIT's student research discount was granted from the Multi-Health Systems (MHS) company which provided "30% off related product orders over \$50 (before shipping) as well as access to scored datasets for a fee of \$6 per administration online" (Shawna Ortiz, personal communication, November 24, 2014). Application documents were required which included a letter from the faculty supervisor, qualification forms, and information about the specifics of the study. The MHS company



also required that a report of the research data be sent to them upon completion of the study.

***Institutional Review Board.***

The application to the Kennesaw State University's Institutional Review Board (IRB) was submitted on December 1, 2014. After adding the online consent form and changing the online survey format, the study was approved as exempt from continuing review by the IRB (Christine Ziegler, personal communication, December 9, 2014).

**Procedures for data collection.**

Nurses from three psychiatric nursing associations: American Psychiatric Nurses Association (APNA), International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG) were asked to participate through online surveys to answer demographic questions and take the two EI tests. In an effort to encourage participation, anonymous data were collected. Each participant used a unique identification code so the data of the SREIS demographic data and self-awareness questions and data of the MSCEIT scores were merged. To assure a unique ID, the following directions were provided:

You will need an eight-digit unique identification number to log-on for both of the emotional intelligence tests. Please use the first two digits of your date of birth (for example: January would be 01, February would be 02....December would be 12), plus the date of your birthday (for example: 1 would be 01, 10<sup>th</sup> would be 10.... 31<sup>st</sup> would be 31) and then the four digits of your year of birth: for example: 1959. If you were born on January 5, 1960, your eight-digit unique code would be: 01051960.

***Participant and consent forms.***

The directions to create their eight-digit code were on the Consent Form (See Appendix L). If two people had the same identification number due to identical birthdates, the date the participant took the SREIS or MSCEIT could be matched for further differentiation. These directions were clearly stated in the Consent and Participant Forms since this was one of the main issues of concerns by participants during the pilot study. The MSCEIT demographic information that was asked at the beginning of the online test cannot be altered per the MSCEIT Company (R. Mena, personal communication, April 9, 2013). This section had a place to put the first and last names. The participants were to place their eight-digit code in both the first and last name sections before the MSCEIT would allow them to begin the test. In the pilot study, participants entered their names in this section because they stated that the MSCEIT would not let them proceed using just their numbers. To address this risk to participant anonymity, I contacted the MHS company, and determined that future iterations of the study would require participants enter their numbers in both sections of the name fields (R. Mena, personal communication, April 9, 2013). Copies of the Consent and Participant's forms are in Appendix K and L.

***Recruitment of participants.***

The Members' Bridge blog on the APNA site is a popular site for solicitation to join research studies. The national office for the APNA granted permission to use this site to recruit participants (P. Black, personal communication, April 29, 2014).

The ISPN website contact information was also consulted on ways to reach the members (T. Sims, personal communication, November 10, 2013). The ISPN uses

Facebook and 578 people had acknowledged use of this site (Facebook, n.d.). The ISPN office granted permission to use their Facebook site to recruit participants (M. Penisten, personal communication, March 12, 2014).

To reach participants from Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG), membership e-mail addresses were used. The group has approximately 60 active members (MAAPPNG member, personal communication, May 29, 2014). Invitations were sent to participants in the current study using the same announcement as the other two sites. An announcement was posted on the Psychiatric Nurses Association's (APNA) Member's Bridge blog about the study (see Appendix M).

***Timeline.***

With IRB approval, the online survey and MSCEIT instruments were set-up and the first participants responded on December 10, 2014. Per the G-power calculation, 82 participants were needed for one research question and 84 participants for another question. The surveys were closed on March 23, 2015 after data on 108 participants were obtained on the MSCEIT and 131 on the SREIS.

***Recruitment procedures.***

The recruitment announcements were first sent out on December 10, 2014. The announcements were the same for each of the three psychiatric nursing organizations (see the Participant form - Appendix K and Consent Form - Appendix L), but were formatted slightly different for the ISPN Facebook page because the consent form could not be attached. The consent form was added to the end of the recruitment announcement.

Throughout the recruitment period, participants responded with requests to forward the survey e-mails to psychiatric nurses at their hospitals and to graduate psychiatric

students. A participant who was a member of both ISPN and MAAPPNG stated that she had forwarded the e-mail to psychiatric nurses she knew because she thought nurses would respond more likely if they knew the person sending the e-mail. One participant forwarded the recruitment announcement to graduate psychiatric nursing students. The recruitment announcement was then forwarded to schools of nursing where graduate PMHN programs were in place.

To encourage participation, the participants' anonymity was monitored. Thirty-four participants out of the 131 respondents either used a nickname or name, which were replaced with numbers from 01001999 to 34001999.

#### ***Instruments.***

The SREIS (see Appendix A) and demographic information (age, gender, race, education level, type of nursing license, country of residence, years worked as a psychiatric nurse, and years worked at the present mental health facility or retired or currently not working in a psychiatric setting) were loaded on the online survey so participants could access online using the URL posted on the recruitment e-mail. When the participants were finished with the descriptive questions and SREIS on the online survey, the MSCEIT from the MHS website was programmed to automatically come up. The MSCEIT data would be lost if the participant did not answer all the questions at one time, so participants were told in the recruitment e-mail which included the consent form they could either take the MSCEIT immediately after the SREIS test or return at a later date using the URL on the recruitment e-mail.

#### ***Human subject protection.***

In the consent form, participants were told that participation in this study was voluntary and if they decided to be in the study and then changed their mind, they had the right to drop out at any time without penalty. The consent form also stated that the participant would have minimal emotional risk due to self-discovery. All data from both websites (online survey and MHS) were anonymous. The records were kept private to the extent allowed by law. The data were only shared with those who made sure the study was done correctly (dissertation committee, KSU Institutional Review Board, and the Office for Human Research Protection [OHRP]). The participants' unique eight number code rather than names were used on study records. No information that might identify a participant will appear when the study is presented or the results are published. Findings will be summarized and reported in-aggregate form.

*Procedures to attend to rigor.*

In research question one, the data of PMHN's emotional intelligence scores on the MSCEIT were examined with the sample of 5,000 respondents on which the MSCEIT was normed (Mayer et al., 2002). The question was whether the mean aggregate and branch scores of PMHN in the current study were significantly different from the mean aggregate and branch scores of the MSCEIT's 5,000 respondents. According to the null hypothesis, the two groups would be equal and for the alternative hypothesis the two groups would not be equal (Burns & Grove, 2001).

*Hypotheses.*

H<sub>0</sub>: The mean EI scores of each of the two groups are equal.

H<sub>a</sub>: The mean EI scores of each of the two groups are not equal.

Trochim (2001) recommends a significance level of .05 (odds that the observed result is due to chance) and a statistical power of .80 (odds that a treatment effect will be observed) in social research. A high enough level of significance is needed to avoid making a Type I error where the null hypothesis is rejected when the null hypothesis was true. A significance level of .05 was used to avoid a Type I Error. A Type II error occurs when the null hypothesis is not rejected even though a difference exists between the two groups (Burns & Grove, 2001). The power level was set at .80 to avoid a Type II error. To determine the sample size, a power computation (G-Power, n.d.) was conducted using gPower. With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 82 participants was needed.

In research questions two and three, internal consistency reliability of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS) was tested. In question two, split-half reliabilities of the MSCEIT was used because of the test's item heterogeneity to address rigor (Mayer et al., 2003). The items are non-homogeneous so using a split-half reliability test would help statistically control the reliability estimate.

*Hypotheses.*

H<sub>0</sub>: The MSCEIT will not demonstrate reliability with a sample of PMHN.

H<sub>a</sub>: The MSCEIT will demonstrate reliability with a sample of PMHN.

In question three, Brackett et al. did not address the heterogeneity concerns in their studies, so I ran both split-half reliabilities and Cronbach's alpha to compare the results.

*Hypotheses.*

H<sub>0</sub>: The SREIS will not demonstrate reliability with a sample of PMHN.

H<sub>a</sub>: The SREIS will demonstrate reliability with a sample of PMHN.

In research question four, the correlation of the MSCEIT and the SREIS was examined. A correlation at a .7 or higher level is needed to justify using a more economical and more feasible test (SREIS) than the MSCEIT in future studies. The null hypothesis states that the sample correlation is equal to zero and the alternate hypothesis states the sample correlation coefficient is not equal to zero (Burns & Grove, 2001).

*Hypotheses.*

H<sub>0</sub>:  $r = 0$ ; the sample correlation coefficient is equal to zero.

H<sub>a</sub>:  $r \neq 0$ ; the sample correlation coefficient is not equal to zero.

Trochim (2001) recommends a significance level of .05 (odds that the observed result is due to chance) and a statistical power of .80 (odds that a treatment effect will be observed) in social research. If a high enough level of significance is not used, a Type I error could occur where the null hypothesis is rejected when the null hypothesis is true. A significance level of .05 was used to avoid a Type I Error. A Type II error occurs when the null hypothesis is not rejected even though a difference exists between the two groups (Burns & Grove, 2001). The power level was set at .80 to avoid a Type II error. To determine the sample size, a power computation was conducted using gPower (G-Power, n.d.). With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 84 participants was needed.

**Treatment of data.**

The SREIS and demographic data were collected from an online survey. IP addresses were not collected from the online survey. The MSCEIT was scored by the Multi-Health System, Inc. (MHS), and the raw data and the standard scores were downloaded in an Excel spreadsheet (Mayer et al., 2002). The raw data remained at the MHS, but the company did not have access to the demographic or SREIS data from the online survey. The Multi-Health Systems (MHS) company collected IP addresses, but held all information collected in strict confidence and limited the use of any data collected to the specific purposes outlined in the MSCEIT document. It ensures both security and privacy (S. Ortiz, personal communication, February 11, 2013). The MSCEIT data, the SREIS scores, and the demographic data were downloaded into the Statistical Package for the Social Sciences (SPSS) 23.0 to run descriptive statistics and Pearson's correlations. All data were stored on a password protected hard drive dedicated solely to the current study and locked in a file cabinet for three years after completion. After three years, the data will be destroyed.

The SREIS data could be exported as an Excel document or directly to IBM SPSS Statistics 23. The results were loaded both ways on SPSS and compared. The MSCEIT data were sent as a scored database that was loaded on SPSS. None of the data included participants' names.

***Analytic procedures.***

Descriptive statistics were conducted to describe the sample and examine central tendencies and measurements of spread across the mean. Inferential statistical analyses were used to test for convergent validity by examining the relationship between the



PMHN EI individual question responses of the MSCEIT and SREIS and the aggregate and branch scores using Pearson's Correlation Coefficient and Spearman-Rank Order. Examination of internal reliability included Cronbach's alpha and split-half reliabilities for both the MSCEIT and SREIS. While the MSCEIT and SREIS have been examined for reliability in other populations and found to have full-scale reliability in the MSCEIT to be .91 and branch reliabilities ranged from .74 to .89 (Mayer et al., 2002) and the SREIS to be .84 (Brackett et al., 2006), they have not been examined in PMHN.

Key demographic variables (age, gender, race, country of residence, education level, type of nursing license, years worked as a psychiatric nurse, and years worked at the present primary mental health facility, retired or not working in a psychiatric setting) were collected to describe the population of study. The demographic data were grouped and examined according to previous studies.

To protect against bias, (1) linkages between conceptual and operational definitions of variables; (2) sample selection and size; (3) the use of reliable and valid instruments (testing for reliability and validity); and (4) data collection procedures that achieve some environmental control (Burns and Grove, 2001) were utilized.

Four research questions were addressed in this study. They are:

*Research question # 1:*

Are the emotional intelligence (EI) total scores in psychiatric-mental health nurses (PMHN) on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?

Mayer et al. (2002) noted in their *User Manual* that the MSCEIT was normed on a sample of 5000 individuals who took the test across North America. The authors noted

that the “MSCEIT scores are computed as empirical percentiles, then positioned on a normal curve with an average score of 100 and a standard deviation of 15” (2002, p. 18).

A one sample two tailed t-test was conducted to compare the mean of the PMHN’s MSCEIT total scores to the mean of Mayer et al.’s mean of MSCEIT scores (100). To determine the sample size, a power computation (G-Power, n.d.) was conducted using gPower. With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 82 participants were needed. In the results section the mean difference between the PMHN and the normed sample was reported using confidence intervals, the t score, and p value.

Frequency distributions were used to describe the sample using the nominal data: gender, race, and country of residence. Grouped frequency distributions were collected for educational level and years worked as a mental health nurse with means and range. Actual age scores were collected. EI scores using the MSCEIT (total and branch scores) were grouped between below average, average, and above average with mean, range and standard deviation computed (Tables 3 and 6). Two other supplemental scales for the MSCEIT were analyzed: scatter score and the positive-negative bias score (Table 4). The MSCEIT scatter score is an indicator score for the variability of the participants’ task scores (Mayer et al., 2002). If the scatter score is greater than 115, the variability in performance is considered high and if it is below 85 it is considered low. The positive–negative bias score shows a tendency for participants to consistently perceive stimuli as overly positive or negative, which can lead participants to misread situations (Mayer et al., 2002). The positive-negative score is based on the pictures task results with a standardized mean of 100 and a standard deviation of 15.

*Research question #2:*

Does the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) demonstrate internal consistency reliability to measure emotional intelligence in psychiatric-mental health nurses (PMHN)?

Mayer et al. (2003) explained that the four-branch scores of the MSCEIT draw on dissimilar tasks that include different item forms, which makes the items non-homogeneous. The authors proposed using split-half reliability coefficients as the statistic of choice. The proposed study used split-half reliabilities of the MSCEIT because of the test item heterogeneity (Mayer et al., 2003). Maul (2012c) stated that the multifaceted structure of the MSCEIT induces local item dependence and can cause inflation of traditional estimates of reliability if not statistically controlled.

*Research question # 3:*

Does the Self-Rated Emotional Intelligence Scale (SREIS) demonstrate internal consistency reliability to measure emotional intelligence in psychiatric-mental health nurses (PMHN)?

Split-half reliabilities were used to test the internal consistency reliability of the Self-Rated Emotional Intelligence Scale (SREIS). Cronbach's alpha was used to compare to the split-half reliability coefficients.

*Research question # 4:*

Is there a correlation between the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) total and branch scores and the Self-Rated Emotional Intelligence Scale (SREIS) total and branch scores?

Pearson's Correlation was used to examine the relationship (convergent validity) between the MSCEIT and SREIS total and branch scores (Appendix L). Convergent validity examines the relationship between two measures (Trochim, 2001). If the MSCEIT and SREIS scores were highly correlated, convergent validity would be demonstrated between the two instruments. To determine the sample size, a power computation (G-Power, n.d.) was conducted using gPower. With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 84 participants was needed. Four assumptions were addressed in order to use Pearson's Correlation (Laerd Statistics, 2013):

1. Variable level-- the two variables must be measured at the interval or ratio level – the MSCEIT is an EI test that is measured along a continuum and as numerical values so it is measured at the interval level. The SREIS uses a Likert scale. The literature is mixed whether Likert scales are considered “continuous” or “nominal” (Laerd, 2013).  
  
The argument is a Likert scale could be ordinal or interval (Newsom, n.d.). If there is equal distance between each value and the value has a numeric score, a researcher could use the instrument as an interval or continuous variable (Newsom, n.d.).
2. Linear relationship between the two variables – A scatterplot of the scores in SPSS was examined to check for a linear relationship between the MSCEIT and SREIS total and branch scores. A linear relationship was not determined.
3. No significant outliers – A boxplot was examined and there were no values greater than 1.5 box-lengths from the edge of the box (Laerd Statistics, 2013).

4. Assumption of bivariate normality - A visual inspection of a histogram and the Shapiro-Wilk test of normality was conducted (Laerd Statistics, 2013).

The Shapiro-Wilk was greater than 0.05, so the assumption of normality was violated.

Because the assumptions of a linear relationship and bivariate were violated, a nonparametric test, Spearman-Rank Order was run (Laerd Statistics, 2013). Spearman's Rank Order Correlation has three assumptions that had to be met: the variables are either continuous or ordinal, represent paired observations, and a monotonic relationship (the value of the one variable increases or decreases with the other variable) occurs between the two variables. The assumptions were met as the variables of the MSCEIT were continuous and the SREIS was ordinal, the variables were paired observations and the variables showed a monotonic relationship.

### **Population and Sample**

The population included all psychiatric mental health nurses. The sample was members of the American Psychiatric Nurses Association (APNA), International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG). These three organizations were chosen because two are internationally and nationally known as psychiatric nurse organizations (Boyd, 2015) and one is a local Georgia psychiatric nursing organization. The three groups provided a realistic approach to reach psychiatric-mental health nurses on international, national, and local levels. The sample was a convenience nonprobability sample, which had the advantage of being accessible, easy to do, and anytime use (Trochim, 2001). Because there was no evidence that the volunteer participants were

representative of the population of psychiatric-mental health nurses, external validity was weak and bias could occur (Trochim, 2001). A snowball technique was also used.

Members of the three PMHN's associations were instructed that they could forward the link to other psychiatric nurses they knew.

American Psychiatric Nurses Association (APNA) is the largest psychiatric-mental health nursing membership organization with over 40 national and international chapters (American Psychiatric Nurses Association [APNA], n.d.b). The purpose of APNA states it is “committed to the specialty practice of psychiatric-mental health (PMH) nursing and wellness promotion, prevention of mental health problems, and the care and treatment of persons with psychiatric disorders” (APNA, n.d.a, para. 1). The membership includes more than 9,000 psychiatric-mental health nurses who are at all levels of education (basic to doctoral) and work in a variety of settings such as inpatient, outpatient, research, education, administration, clinical, private practice, military, and forensic (APNA, n.d.b). The membership also includes full-time students and retired registered nurses.

The International Society of Psychiatric-Mental Health Nurses (ISPN) was officially inaugurated in 1999 at the First Annual ISPN Conference in Baltimore, MD after two years of communications and planning (International Society of Psychiatric-Mental Health Nurses [ISPN], n.d.). Leaders of other professional psychiatric nursing organizations facilitated the forming of ISPN (ISPN, n.d.). The ISPN purpose is:

To unite and strengthen the presence and voice of specialty psychiatric-mental health nurses; promote equitable quality care for individuals and families with mental health problems; enhance the ability of psychiatric-mental health nurses to

work collaboratively on issues facing the profession; provide expanded opportunities for networking and leadership development; and impact healthcare policy to facilitate effective use of human and financial resources. (ISPN, n.d., para. 4)

#### Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia

(MAAPPNG) was founded in 1985 by a group of psychiatric clinical nurse specialists (MAAPPNG member, personal communication, May 29, 2014). MAAPPNG has approximately 60 active members and its purpose is to support the practice of mental health nursing through informing the public, other nurses, and nursing students about the roles and activities of advanced practice psychiatric nursing with a focus on professional support for practitioners, education, consultation, and practice issues (MAAPPNG member, personal communication, May 29, 2014). Some of the issues MAAPPNG has been involved in include becoming designated as an advanced practice group by the Board of Nursing, billing insurance companies, and having prescriptive practice (MAAPPNG member, personal communication, May 29, 2014).

Each association was contacted by Facebook, member blog, or e-mail. The members of ISPN who use Facebook were invited to participate. The members of APNA who use the member bridge blog were invited to participate. The MAAPPNG members who had turned in e-mail addresses were contacted through e-mails to participate.

#### **Sample size.**

To determine the sample size to address question one, a power computation (G-Power, n.d.) was conducted using gPower. With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 82 participants was needed.

For questions two and three, a sample size of 80 to determine reliability and validity was obtained which is consistent to Hobart, Cano, Warner and Thompson's (2012) findings that sample sizes that were a minimum of 20 for reliability and 80 for validity provided estimates highly representative of the main study sample. To determine the sample size to address question four, a power computation (G-Power, n.d.) was conducted using gPower. With an alpha equal to 0.05, effect size moderate (0.3), and power equal to 0.80, a sample size of 84 participants was needed.

#### **Inclusion and exclusion criteria for participation.**

The participants in this study were psychiatric nurses, either licensed practical, registered nurses or advanced practice nurses, certified in psychiatric nursing. These psychiatric nurses were members of the American Psychiatric Nurses Association (APNA), International Society of Psychiatric-Mental Health Nurses (ISPN), or Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG) or received an e-mail to participate from a member of one of those organizations. Participants in the study must have been at least 18 years of age and have English as their principal language.

#### **Instruments**

This study used two instruments that measure emotional intelligence: The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS). Both emotional intelligence tests are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence and are described in this section.



**Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT).**

The Mayer, Salovey, and Caruso, MSCEIT user's manual (2002) was used to guide test administration. The MSCEIT is a performance-based assessment of overall EI for individuals 17 or over (Mayer et al., 2002). The MSCEIT was designed so that the responses would represent actual abilities to solve emotional problems and be "relatively unaffected by self-concept, response set, emotional state, and other confounds" (Mayer et al., 2002, p. 1). The MSCEIT and the tests on which it was developed have been studied in many countries including the United States, Australia, Canada, Israel, France, and Great Britain, and the results suggest that the MSCEIT has cross-cultural applicability and utility (Mayer et al., 2002). The authors used the Dale-Chall procedure to determine the reading level to be grade 8.

The MSCEIT includes 141 items and most individuals take from 30–45 minutes to complete the instrument (Mayer et al., 2002). The MSCEIT has an overall total score of EI, two area scores of EI (experiential and strategic areas), four branch level scores (perceiving emotions, using emotions, understanding emotions, and managing emotions), eight task level scores (faces, pictures, sensations, changes, blends, emotion management, and emotional relations), a positive-negative bias score, and a scatter score (Mayer et. al, 2002).

The MSCEIT is distributed through a company called Multi-Health Systems (MHS), Inc. that provides psychological assessments and services (Multi-Health Systems [MHS], 2015a). MHS computes the MSCEIT scores through their own computerized programs (Mayer et.al, 2002). Administrators can access the raw scores online after purchase (Mayer et al., 2002). The adjusted raw scores depend on the scoring option

selected by the test administrator including age, gender, or ethnic group (Mayer et al., 2002). The authors recommend leaving the score uncorrected, or to correct for age and gender only. The MSCEIT data are skewed and percentiles are used to standardize the scores positioned on a normal curve with an average of 100 and a standard deviation of 15 (Mayer et al., 2002). MHS has both general and expert consensus scoring available for the MSCEIT (Mayer et al., 2002). The general consensus scoring utilizes the entire normative sample of 5000 to score item responses (Mayer et al., 2002). For each item an individual's score is compared to the entire sample. For example, if an individual matched the same score as 80% of the sample, a score of .80 for that question would be coded. The expert scoring is similar except the individual's score is compared to 21 emotion experts to formulate the scores. For example, if 18 of the 21 experts chose "C" to be the correct answer and an individual choose "C" as well, then the score for that item would be .86 (18 out of 21 converted to a proportion).

MHS also provides two supplementary scores: the scatter score and the positive-negative bias score (Mayer et al., 2002). The scatter score assesses the amount of variation in performance across tasks and has a mean of 100 and standard deviation of 15. Individuals with lower scores (less than 85) indicate highly consistent performance across the eight subtasks. Individuals with higher scatter scores (higher than 115) indicate that their performance varies a lot from task to task. The positive-negative bias score is based on responses to some of the pictorial questions on the MSCEIT. The standardized score is a mean of 100 and a standard deviation of 15. Higher scores (over 115) indicate the participant has positive responding and lower scores (less than 85) indicate a tendency of

the individual to assign negative or less positive emotions to stimuli. Either overly positive or negative association could affect an individual's ability to be most effective.

In order to purchase the MSCEIT, an individual either has to have formal psychological training and be approved by MHS or complete a certification program (MHS, 2015b). The MSCEIT Certification Course from the EI Skills Group includes three components: pre-workshop preparation, three-day course, and post-course assignments (EI Skills Group, 2014). I successfully completed the MSCEIT certification course in the fall of 2012 and am qualified to purchase and use the MSCEIT. I also applied and was granted the research discount for the MSCEIT for the pilot study. I also re-applied and was granted the discount, which added a considerable price reduction. In the pilot study, I purposely planned to give individual feedback to each participant who requested. The raw data set cost was \$6 per person with the 30% discount (Multi-Health Systems invoice, personal communication, November 13, 2013). The cost of feedback using the Resource report was \$38.50 per person. Individualized feedback in the current study was not given because the emphasis was on testing the tools' internal consistency reliability and convergent validity. A poster of the study results will be presented to the APNA's annual conference and the MAAPPNG group at one of the bi-annual meetings. These potential presentations could give further education about the EI construct to PMHNS.

#### **Self-Rated Emotional Intelligence Scale (SREIS).**

The SREIS is a measurement tool designed by Brackett et al. (2006) to measure self-awareness of EI using the MSCEIT as a guide in the development of the tool (See Appendix A). Brackett gave me permission to use this tool in this study (See Appendix

B). The revised SREIS (See Appendix A) that was used in Brackett et al.'s second and third studies (2006) has a list of 19 items pertaining to a person's insight into emotions.

The directions are:

Please use the rating scale below to describe how accurately each statement describes *you*. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. Please read each statement carefully, and then write the letter that corresponds to how in accurately or accurately each statement describes you. (SREIS, p. 1)

The scale includes the following 5 phrases: very inaccurate, moderately inaccurate, neither nor, moderately accurate or very accurate (Appendix A). Four of the questions (2, 4, 15, and 16) were reversed for analysis due to reversed coding. The scale's scoring guide shows which questions to combine to find the average to determine the score for each branch (Appendix A). A mean above the mid-point on the 5-point scale would indicate that the individual believed they possessed higher than average EI (Brackett et al., 2006).

### **Summary of Chapter Three**

In summary, with a sampling of PMHN at national and state levels, a descriptive correlational design study was conducted to examine psychiatric-mental health nurses' (PMHN) emotional intelligence (EI) scores. Four research questions were posed. The first question examined the mean and standard deviation of the participants' MSCEIT EI level in this study compared to a sample of 5000 respondents the authors used to norm the MSCEIT. Questions two and three sought to determine the internal consistency

reliability of two EI tests, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS). The fourth research question provided analysis of correlation between the MSCEIT and the SREIS's total and branch scores. In order to generalize and affect future-nursing practice in general, additional EI studies involving all nursing specialties are needed.

## CHAPTER FOUR

### Overview of Study

The Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence (EI) proposes that a person's thinking can be more intelligent if the person recognizes the value of perceiving, using, understanding, and managing emotions and uses this information to enrich cognitive processes (Brackett et al., 2006). No profession recognizes the need for these values more than that of psychiatric-mental health nurses (PMHN) whose practice is often guided by Hildegard Peplau's theory of Interpersonal Relations in nursing (Peplau, 1952). It is through Peplau's theory that PMHN initiate and maintain therapeutic relationships with their patients. The Four-Branch Ability Model of EI supports Peplau's theory and provides a systematic and intentional framework for studying the role of emotional abilities in relationships by explaining the cognitive and emotional components (Brackett et al., 2006). The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the MSCEIT and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the SREIS scores (total and branch).

The study used Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI as conceptual frameworks to guide the

research. Two instruments were used in the study: the MSCEIT and the SREIS. Both instruments are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of EI (Brackett et al, 2006; Mayer et al., 2004); however, they differ in accessibility, cost, feasibility of use, and method of measurement (performance versus self-report). To consider adoption of EI assessments for identifying PMHN strengths and challenges, accessible, affordable, feasible, reliable and valid EI tools are needed. This chapter reports the findings of the study beginning with the description of the participants, and the scoring of the MSCEIT, followed by the results of the analysis of each of the following four research questions:

1. Are the emotional intelligence total scores in PMHN on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?
2. Does the MSCEIT demonstrate internal consistency reliability to measure emotional intelligence in PMHN?
3. Does the SREIS demonstrate internal consistency reliability to measure emotional intelligence in PMHN?
4. Is there a correlation (convergent validity) between the MSCEIT total and branch scores and the SREIS total and branch scores?

### **Description of Participants**

Participants completing the demographic questionnaire, the MSCEIT and the SREIS, were PMHN from three major organizations: American Psychiatric Nurses Association (APNA), the International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia

(MAAPPNG). The demographic questionnaire was completed by 131 PMHN respondents (see Table 1). Although 131 participants responded to all or part of the questions required for the study, the sample size in the analysis varied due to incomplete responses. The MSCEIT data ( $N=108$ ) included 5 participants who did not fill out the descriptive data or SREIS. Of the 131 participants, only 124 results of the SREIS were complete to use in the analysis for question three. Of the 108 participants who completed the MSCEIT, five did not complete the SREIS and two were incomplete, so only 101 were used in the analysis of question four.

#### **Gender and Age.**

Of the 131 participants providing demographic data, 90% ( $N=118$ ) were female, 9% ( $N=12$ ) were male, and .8% ( $N=1$ ) was transgender. Participants ranged in age from 25 to 77 ( $M=49.97$ ,  $SD=13.125$ ).

#### **Race.**

Participants were asked to choose one of seven categories for race: Hispanic or Latino, Black or African American, Native American, Asian/Pacific Islander, White, Other or Unknown. Five categories of race were reported by the 131 participants: Asian/Pacific Islander ( $N=3$ ) made up 2.3% of the sample, 5.3% ( $N=7$ ) were Black or African American, 3.1% ( $N=4$ ) were Hispanic or Latino, 85.5% ( $N=112$ ) were White, and 3.9% ( $N=5$ ) selected Other as their race.

#### **Country of citizenship.**

Participants were asked their country of citizenship. Participants ( $N=129$ ) indicated their country of citizenship was “United States”. One participant did not answer this question and one responded with an answer that was a county instead of a country.



**Education.**

Participants were asked to choose their highest educational degree from the following choices: Diploma, Associate degree, Bachelor's degree, Master's degree and Doctorate degree. Respondents were diverse in educational preparation although the majority had master's and doctorate degrees. Educational degrees were: .8% ( $N=1$ ) diploma graduate, 9.9% ( $N=13$ ) associate degree, 24.4% ( $N=32$ ) bachelor's degree, 42.7% ( $N=56$ ) master's degree, and 22.1% ( $N=29$ ) doctorate degree.

**Nursing license.**

Participants were asked to choose all that apply for the following licenses: licensed practical, registered, or advanced practice. They also could choose the option "retired". Of those reporting, 1.5 % ( $N=2$ ) were licensed practical, 1.5% ( $N=2$ ) held both licensed practical and registered nurse licenses, and .76 % ( $N=1$ ) held a practical, registered and advanced practical license. Although 51.2% ( $N=67$ ) held a registered nurse license, 20.6% ( $N=27$ ) held both a registered and advanced practice, and .76% ( $N=1$ ) were retired with a license as a registered nurse. Some respondents, 22.9% ( $N=30$ ), put advanced practice and .76% ( $N=1$ ) were retired and held an advanced practice license.

**Number of years worked as a psychiatric-mental health nurse.**

The majority of participants ( $N=130$ ) responded to the question of number of years worked as a psychiatric-mental health nurse (one skipped the question). Of those responding, two were excluded who stated they were not working which left  $N=128$  participants whose data were used in the analysis of the question. Years worked was grouped into four categories that included less than 5 years, 5-10 years, 11-20 years and 21-50 years. The group with the largest number of participants (32.8%,  $N=42$ ) reported

working between 21 – 50 years; the other three groups were: less than five years (30.47%,  $N=39$ ), 5 – 10 years (18.75%,  $N=24$ ), and 11- 20 years (17.97%,  $N=23$ ).

**Years worked at current psychiatric facility.**

Participants were asked if they were currently working in a psychiatric facility, retired or not currently working in a psychiatric facility. The largest group (44.6%) of participants had worked at their psychiatric facility between two and ten years, 19.23% worked less than two years, 13.08% between 11 – 20 years, 6.9% greater than 20 years, 3.9% were retired, and 12.31% participants were not currently working in a psychiatric setting.

Table 1  
*Demographic Variables (N = 131)*

Variable	N (%)
Gender	
Female	118 (90.1%)
Male	12 (9.2%)
Transgender	1 (.8%)
Race	
Asian/Pacific Islander	3 (2.3%)
Black or African American	7 (5.3%)
Hispanic or Latino	4 (3.1%)
White	112 (85.5%)
Other	5 (3.9%)
Country of Citizenship – United States	129 (100.0%) *
Education – Highest Degree	
Diploma	1 (.8%)
Associate	13 (9.9%)
Bachelor	32 (24.4%)
Master	56 (42.7%)
Doctorate	29 (22.1%)
Type of Nursing License – one/combinations	
Licensed Practical Nurse	2 (1.5%)
Licensed Practical/Registered Nurse	2 (1.5%)
Licensed Practical/Registered Nurse/Advanced Practice	1 (.76%)
Registered Nurse	67 (51.2%)
Registered Nurse/Advanced Practice	27 (20.6%)
Registered Nurse/Retired	1 (.76%)
Advanced Practice Nurse	30 (22.9%)
Advanced Practice Nurse/Retired	1 (.76%)
Years worked as a psychiatric nurse	**
< 5	39 (30.47%)
5 – 10	24 (18.75%)
11 - 20	23 (17.97%)
21 – 50	42 (32.8%)
Years worked at current psychiatric facility	***
< 2	25 (19.23%)
2 – 10	58 (44.6%)
11 – 20	17 (13.08%)
> 20	9 (6.9%)
Retired	5 (3.9%)
Not currently working in psychiatric setting	16 (12.31%)

\*One skipped the question; one put an answer that was not a country

\*\* One skipped the question; one put “A13”; one put “not working as a psych nurse”

\*\*\* One skipped the question

### Scoring of MSCEIT

To answer the four research questions, the methods for scoring the MSCEIT total and branch scores were taken from the “Mayor Salovey Caruso Emotional Intelligence Test Client Feedback” booklet (Caruso, 2012). The booklet described the MSCEIT total score as either standard scores (less than 70 to greater than 130) or ranges. Ranges start with “improve” which is a standard score of less than 70 (approximately 2.5%), “consider developing” 70 to 89 (approximately 23%), “competent” 90 to 109 (approximately 50%), “skilled” 110 to 129 (approximately 23%). The PMHN EI scores ranged from a minimum of 77 to a maximum of 130 ( $M=102.63$ ,  $SD=11.938$ ). PMHN total scores indicated most were “competent” ( $N=59$ ), and or “skilled” ( $N=31$ ).

Table 2

*MSCEIT EI Total Scores of PMHN (N=108)*

Ranges	N (%)
Consider Development: 77 – 89	17 (15.7%)
Competent: 90 – 109	59 (54.63%)
Skilled: 110 – 129	31 (28.7%)
Expert: 130 and higher	1 (.01%)

Another way to interpret the MSCEIT standard scores of the PMHN is to group them in averages: below average, average or above average EI (Beauvais, 2011). The PMHN’s total scores included 17 people who had below average (less than 90), 59 who scored in the average range (90-109) and 32 who scored above average (110 or higher). Each of the four branch scores (perceiving, using, understanding and managing) can also be grouped into below average, average or above average ranges. In the first branch,

perceiving emotions, 25 PMHN's scores were below average, 58 were average and 25 had above average scores. In the second branch, using emotions, 23 PMHN's scores were below average, 52 were average and 33 had above average scores. In the third branch, understanding emotions, 5 PMHN's scores were below average, 82 were average and 21 had above average scores. In the fourth branch, managing emotions, 6 PMHN's scores were below average, 80 were average and 22 were above average.

Table 3

*MSCEIT EI Total and Branch Scores of PMHN (N=108)*

Scores	Below Average	Average	Above Average
	< 90 N (%)	90 -109 N (%)	> 110 N (%)
Total EI Score	17 (15.7%)	59 (54.63%)	32 (29.6%)
Perceiving Emotions	25 (23.2%)	58 (53.7%)	25 (23.2%)
Using Emotions	23 (21.3%)	52 (48.2%)	33 (30.6%)
Understanding Emotions	5 (4.6%)	82 (75.9%)	21 (19.4%)
Managing Emotions	6 (5.6%)	80 (74.1%)	22 (20.4%)

The MSCEIT scored database also provides two supplementary scores: positive-negative bias score and scatter score (Mayer et al., 2002). The positive-negative bias score provides a metric of a responder's tendency to respond to the pictorial stimuli in the MSCEIT with positive or negative emotions which can lead responders to misread situations. The PMHN's positive-negative bias score ranged from 68 to 135 maximum ( $M=103.79$ ,  $SD=11.3$ ).

The scatter score assesses the variation in performance across tasks. If the scatter score of a responder is high, more variability than usual is present and that total score would not be a good summary of EI. If the scatter score is low, that indicates little variability. The PMHN's scatter score ranged from 72 to 134 ( $M=98.92$ ,  $SD=11.09$ ). PMHN's scatter scores had 12 low scores (below 85), 84 with typical amount (85 – 114), and 12 with high scores (115 and over).

Table 4

*Positive/Negative Score and Scatter Score*

Scores	$M(SD)$
Positive/Negative Score	103.79(11.3)
Scatter Score	97.37(11.6)

**Analysis****Research questions.***Question one.*

1. Are the emotional intelligence total scores in PMHN on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?

*Hypotheses.*

$H_0$ : The mean EI scores of each of the two groups are equal.

$H_a$ : The mean EI scores of each of the two groups are not equal.

To address question 1, the owners' manual for the MSCEIT was used to obtain the description of the normative data for the MSCEIT. The MSCEIT used a total of 5000

respondents from three samples in over 50 research sites from diverse geographic locations (Mayer, Salovey, & Caruso, 2002). The majority of data came from the United States, but other countries such as the United Kingdom, Canada, Malta, South Africa, and Australia were included. Mayer, Salovey and Caruso (2002) also matched the normative sample to the demographics of the 2000 U.S. census data to demonstrate that the respondents of the normed sample were a “recreation of ‘ideal’ demographic representation for the test, at least in the United States” (p. 30).

Assumptions for the t test were examined for the MSCEIT total score: no outliers were noted as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box, data were normally distributed, as assessed by Shapiro-Wilk’s test ( $p > .05$ ) An independent t test was conducted using the McCallum Layton (2015) statistic calculator to compare the mean scores of the normed 5000 sample of the MSCEIT to the mean EI score of a sample of 108 PMHN obtained in the current study (95% CI).

Table 5

*Independent t Test Between Normed Sample of MSCEIT and Study MSCEIT Results*

	MSCEIT Normed Sample	MSCEIT Study Sample	Significance
<i>N</i>	5000	108	
<i>M</i>	100	102.63	$p < .05^*$
<i>SD</i>	15	11.9	

\*Note:  $p = 0.026$

The results indicate a significant difference ( $p < .026$ ) between the two mean scores of the MSCEIT normed sample and the current study sample with the PMHN having a higher mean ( $M=102.63$ ,  $SD=11.9$ ) compared to that of the normed sample ( $M=100$ ,  $SD=15$ ). The  $H_0$  was rejected. The findings suggest that PMHN scored significantly higher on the MSCEIT than did the 5000 participants included in the normed sample of the MSCEIT.

*Question two.*

Does the MSCEIT demonstrate internal consistency reliability to measure emotional intelligence in PMHN?

*Hypotheses.*

$H_0$ : The MSCEIT will not demonstrate reliability with a sample of PMHN.

$H_a$ : The MSCEIT will demonstrate reliability with a sample of PMHN.

The PMHN MSCEIT data were loaded onto IBM SPSS version 23. Of the 131 total participants, twenty-three participants did not complete both the SREIS and MSCEIT ( $N=108$ ). Two MSCEIT cases were excluded out of the 108 total cases leaving 106 valid cases with responses to the 141 questions of the MSCEIT. To conduct the split-half Cronbach Alpha analysis, the odd numbered questions of the 141 were added first and then the even numbered questions were loaded. The data (A-H) were split into half with H7 and H9 loaded in the second half. The MSCEIT PMHN split-half analyses revealed a moderate to high level of internal consistency, as determined by a split-half Cronbach's Alpha of .786 for part 1 and .816 for the second half. Spearman-Brown's coefficient was .933 and Guttman Split-Half Coefficient was .932 further supporting the findings of the Cronbach Alpha analysis.



The  $H_0$  was rejected. These findings suggest that the MSCEIT in this study revealed a moderate to high level of internal consistency (Field, 2013).

***Question three.***

Does the SREIS demonstrate internal consistency reliability in PMHN?

*Hypotheses.*

$H_0$ : The SREIS will not demonstrate reliability with a sample of PMHN.

$H_a$ : The SREIS will demonstrate reliability with a sample of PMHN.

The SREIS data were loaded onto IBM SPSS version 23. Seven cases were excluded of the 131 cases, leaving 124 valid cases. The mean SREIS score for the 19 items in this study was 4.01,  $SD = .36$ , with a minimum of 2.89 to maximum of 4.46. A moderate to high level of internal consistency was determined by a Cronbach's alpha of .752. The SREIS PMHN split-half analyses revealed a moderate level of internal consistency as determined by a split-half Cronbach's Alpha of .640 for part 1 and .674 for the second half. Spearman-Brown's Coefficient was .613 and Guttman Split-Half Coefficient was .611 further supporting the findings of the Cronbach Alpha analysis.

The  $H_0$  was rejected. These findings suggest that the SREIS in this study revealed a moderate level of internal consistency (Field, 2013).

***Question four.***

Is there a correlation (convergent validity) between the MSCEIT total and branch scores and the SREIS total and branch scores?

*Hypotheses.*

$H_0$ : The sample correlation coefficient is equal to zero.

$H_a$ : The sample correlation coefficient is not equal to zero.

The MSCEIT and SREIS are both based on the Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence and measure emotional intelligence. The MSCEIT is an ability-based test and the SREIS is a self-report measure. Of the 131 participants, one did not complete the SREIS, so 130 cases of the 131 were used in this question analysis. The MSCEIT analysis was based on data from 101 participants who completed both the MSCEIT and SREIS. Pearson's correlation coefficient was chosen to compare the MSCEIT and SREIS branch scores and total scores to determine convergent validity similar to previous research using Pearson product-moment correlation to compare the branch scores of the MSCEIT and SREIS (Dunn et al., 2007) and MSCEIT and another performance test using a Likert scale (Beauvais et al., 2011). In order to use the Pearson correlation, Laerd Statistics (2013) explains four assumptions to be met: The variables should be measured at the interval or ratio level, a linear relationship has to be between the two levels, no significant outliers are present, and the assumption of bivariate normality is satisfied. The MSCEIT's EI score is an example of an interval level variable (continuous variables). The literature is mixed whether Likert scales are considered "continuous" or "nominal" (Laerd, 2013). The SREIS uses a Likert scale starting from "very inaccurate", "moderately inaccurate", "neither nor", "moderately accurate" and "very accurate". The argument is a Likert scale could be ordinal or interval (Newsom, n.d.). If there is equal distance between each value and the value has a numeric score, a researcher could use the instrument as an interval or continuous variable (Newsom, n.d.). Although there were no significant outliers present, the SREIS data did not satisfy the assumption of a linear relationship or bivariate normality so a

nonparametric test, Spearman Rank-Order Correlation, was also run to compare with the Pearson correlation's findings.

The Pearson Product-Moment Correlation generates a coefficient called the Pearson Correlation Coefficient –  $r$  (Laerd Statistics, 2013). The coefficient  $r$  measures the strength and direction of a linear relationship between two continuous variables. If the MSCEIT and SREIS branch and total scores demonstrated a small correlation,  $r$  would be between 0.1 and 0.3, if medium or moderate relationship,  $r$  would be between 0.3 to 0.5, and if a large or strong correlation  $r$  would be greater than 0.5 (Field, 2009). Means and standard deviations and Pearson's correlation were computed with each of the four branches and total scores of each test (see Tables 6 and 7). Although significance was found ( $p < .01$  and  $p < .05$ ) between the branches of the MSCEIT and the total score of the MSCEIT as well as the branches of the SREIS and the total score of the SREIS (table 7), only one correlation was found between the MSCEIT and SREIS branches: the SREIS perceiving branch and the MSCEIT managing branch,  $r(101) = .249, p < .05$ .

Spearman Rank-Order Correlation was conducted to compare with the Pearson's correlation's findings. The Spearman Rank-Order Correlation calculates a coefficient,  $r_s$ , which measures the strength and direction of the association between either one ordinal and one continuous variable, two continuous variables, or two ordinal variables (Laerd Statistics, 2013). The Spearman Rank-Order has three assumptions that must be met: the variables are either continuous or ordinal, represent paired observations, and a monotonic relationship (the value of the one variable increases or decreases with the other variable) occurs between the two variables. The assumptions were met as the variables of the MSCEIT were continuous and the SREIS was ordinal, the variables were paired

observations and the variables showed a monotonic relationship. The Spearman Rank-Order showed a similar result between the SREIS Branch one and the MSCEIT Branch four as the Pearson's correlation findings: a significant, positive weak correlation,  $r_s(101) = .256, p < .01$ . The Spearman-Rank-Order also showed significant, positive weak relationships between branch one of both the MSCEIT and SREIS,  $r_s(101) = .197, p < .05$ , and the third branches of both ( $r_s(101) = .221, p < .05$ ). The  $H_0$  was rejected. The findings suggest that the MSCEIT and SREIS first and third branch scores have significant, positive weak correlations. The first branch of the MSCEIT and SREIS is the "perceiving emotions" branch, which includes skills related to identifying and differentiating emotions in oneself and others (Rivers et al., 2007). The third branch is "understanding emotions" and includes the skills of labeling emotions with accurate language and recognizing similarities and differences between emotion labels and emotions themselves (Rivers et al., 2007). No correlations were found between the second (using or generating emotions to facilitate cognitive activities) and fourth (managing emotions with self and others) branches or between the MSCEIT and SREIS total scores. Because the MSCEIT and SREIS operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI, the findings of the significant, positive weak relationships between the MSCEIT and SREIS's first and third branches were not surprising.

Table 6

*Means and Standard Deviations of MSCEIT and SREIS of Total Scores and Branches*

EI test/Branch	<i>n</i>	<i>M(SD)</i>
MSCEIT- Perceiving Branch	101	99.66(16.362)
MSCEIT – Using Branch	101	100.90(14.493)
MSCEIT – Understanding Branch	101	102.39(8.456)
MSCEIT – Managing Branch	101	102.33(7.592)
MSCEIT – Total	101	102.57(12.270)
SREIS – Perceiving Branch	130	4.1199(.49946)
SREIS – Using Branch	130	3.3372(.40265)
SREIS – Understanding Branch	130	4.0622(.72040)
SREIS – Managing Branch	130	4.1843(.47576)
SREIS - Total	130	4.0120 (.36336)

*Note:* MSCEIT = Mayer-Salovey-Caruso Emotional Intelligence Test; SREIS = Self-Rated Emotional Intelligence Scale; Four branches: perceiving, using, understanding and managing

Table 6.1

*Means and Standard Deviations of the 101 Paired Cases of the MSCEIT and SREIS*


---

EI test/Branch	<i>n</i>	<i>M(SD)</i>
MSCEIT- Perceiving Branch	101	99.66(16.362)
MSCEIT – Using Branch	101	100.90(14.493)
MSCEIT – Understanding Branch	101	102.39(8.456)
MSCEIT – Managing Branch	101	102.33(7.592)
MSCEIT – Total	101	102.57(12.270)
SREIS – Perceiving Branch	101	4.1691(.48383)
SREIS – Using Branch	101	3.3449(.40018)
SREIS – Understanding Branch	101	4.0924(.73247)
SREIS – Managing Branch	101	4.1676(.47190)
SREIS - Total	101	4.0227(.35957)

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*Note:* MSCEIT = Mayer-Salovey-Caruso Emotional Intelligence Test; SREIS = Self-Rated Emotional Intelligence Scale; Four branches: perceiving, using, understanding and managing

Table 7

*Correlations Between the SREIS and the MSCEIT Total and Branch Scores (Pearson's)*

	MSCEIT				
	Branch 1 Perceiving	Branch 2 Using	Branch 3 Understanding	Branch 4 Manage	Total
SREIS					
Branch 1 Perceiving	.190	.034	-.086	.249**	.136
Branch 2 Using	-.063	-.083	-.023	.051	-.082
Branch 3 Understanding	.033	.003	.082	-.001	.028
Branch 4 Manage	.049	.067	-.021	.079	.051
Total	.085	.034	-.004	.124	.066

\*\*p<.01

Table 8

*Convergence (Pearson Correlations) Between the SREIS (SR) and the MSCEIT (MS) Total and Branch Scores*

Variable	1	2	3	4	5	6	7	8	9	10
1. MS. - Perceiv.										
2. MS. – Using	.508**									
3. MS. – Underst.	.191	.205*								
4. MS. – Manag.	.315**	.380**	.090							
5. MS. – Total	.848**	.779**	.439**	.572**						
6. SR. – Perceiv.	.190	.034	-.086	.249*	.136					
7. SR. – Using	-.063	-.083	-.023	.051	-.082	.128				
8. SR. – Underst.	.033	.003	.082	-.001	.028	.437**	.090			
9. SR. – Manag.	.049	.067	-.021	.079	.051	.313**	-.053	.401**		
10. SR. - Total	.085	.034	-.004	.124	.066	.667**	.218*	.782**	.801**	

*Note.* MS. = MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test); Perceiv. = perceiving branch; Using = using branch; Underst. = understanding branch; Manag. = managing branch; Total = total score; SR. = SREIS (Self-Report Emotional Intelligence Scale); Perceiv. = perceiving branch; Using = using branch; Underst. = understanding branch; Manag. = managing branch; Total = total score. Yellow highlighted - comparisons of the MSCEIT and SREIS branches.

\* $p < .05$ . \*\* $p < .01$



Table 9

*Correlations Between the MSCEIT Total/Branches and the SREIS Total/Branches – Spearman's Rho*

	MSCEIT				
	Branch 1 Perceiving	Branch 2 Using	Branch 3 Understanding	Branch 4 Manage	Total
<b>SREIS</b>					
Branch 1 Perceiving	.197*	.096	-.026	.256**	.190
Branch 2 Using	-.080	-.063	.057	.057	-.038
Branch 3 Understanding	-.028	.028	.221*	.038	.061
Branch 4 Manage	-.047	.047	.011	.101	.008
Total	.024	.060	.066	.172	.092

\*\* . Correlation is significant at the .01 level (2-tailed).

\* . Correlation is significant at the .05 level (2-tailed).

#### **Summary of Chapter Four**

The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of Psychiatric-Mental Health Nurses (PMHN) to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the Self-Rated Emotional Intelligence Scale (SREIS) scores (total and branch). The PMHN had a higher mean EI measured by the MSCEIT ( $M = 102.63$ ) compared to that of the 5000 in the normed sample ( $M = 100$ ), which indicated a significant difference ( $p < .05$ ) between the mean scores. Both the MSCEIT and SREIS demonstrated moderate to high levels of internal consistency reliability. Similar to other research studies (Beauvais et al., 2011; Dunn et al., 2007), Pearson's Product-Moment Correlation was used and

showed one significant, positive weak correlation between the MSCEIT and SREIS branches: the SREIS branch one (perceiving emotions) and the MSCEIT branch four (managing emotions),  $r(101) = .249, p < .05$ . Significance was found ( $p < .01$  or  $p < .05$ ) between the branches of each test and with the total scores. Spearman Rank-Order showed a similar result between the SREIS branch one (perceiving emotions) and the MSCEIT branch four (managing emotions) as the Pearson's correlation: a significant, positive weak correlation,  $r_s(101) = .256, p < .01$ . Spearman Rank-Order also showed significant, positive weak correlations for the first (perceiving emotions),  $r_s(101) = .197, p < .05$ , and third (understanding emotions),  $r_s(101) = .221, p < .05$ , branches of the MSCEIT and SREIS. Because the MSCEIT and SREIS operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI, the findings from the Spearman of the significant, positive weak relationships between the MSCEIT and SREIS's first (perceiving emotions) and third (understanding emotions) branches were not surprising. Chapter Five presents the conclusions and implications for further research.

## CHAPTER FIVE

### Overview of Study

The Mayer-Salovey-Caruso Four-Branch Ability Model of Emotional Intelligence (EI) proposes that a person's thinking can be more intelligent if the person recognizes the value of perceiving, using, understanding, and managing emotions and uses this information to enrich cognitive processes (Brackett et al., 2006). No profession recognizes the need for these values more than that of psychiatric-mental health nurses (PMHN) whose practice is often guided by Hildegard Peplau's theory of Interpersonal Relations in Nursing (Peplau, 1952). It is through Peplau's theory that PMHN initiate and maintain therapeutic relationships with their patients. The Four-Branch Ability Model of EI supports Peplau's theory and provides a systematic and intentional framework for studying the role of emotional abilities in relationships by explaining the cognitive and emotional components (Brackett et al., 2006). The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the MSCEIT and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the SREIS scores (total and branch).

The study used Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI as conceptual frameworks to guide the

research. Two instruments were used in the study: MSCEIT and SREIS. Both Instruments are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of EI (Brackett et al, 2006; Mayer et al., 2004); however, they differ in accessibility, cost, feasibility of use, and method of measurement (performance versus self-report). To consider adoption of EI assessments for identifying PMHN strengths and challenges, accessible, affordable, feasible, reliable and valid EI tools are needed.

Chapter five provides consideration of the analysis and findings of the study in the context of the theoretical frameworks, Mayer-Salovey-Caruso Four-Branch Ability Model of EI and Hildegard Peplau's theory of Interpersonal Relations in Nursing, and the following four research questions:

1. Are the emotional intelligence total scores in PMHN on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?
2. Does the MSCEIT demonstrate internal consistency reliability to measure emotional intelligence in PMHN?
3. Does the SREIS demonstrate internal consistency reliability to measure emotional intelligence in PMHN?
4. Is there a correlation (convergent validity) between the MSCEIT total and branch scores and the SREIS total and branch scores?

PMHN total scores on the MSCEIT were significantly higher ( $M=102.63$ ,  $p < .05$ ) than the total scores of the MSCEIT normed sample ( $M=100$ ). Both the MSCEIT and SREIS demonstrated moderate to high levels of internal consistency reliability. Initial testing of correlations between the branches of the MSCEIT and SREIS using Pearson's

Product-Moment Correlation revealed a significant, positive though weak correlation between one branch of the SREIS and one branch of the MSCEIT. Follow-up correlational analysis with Spearman Rank-Order confirmed the findings seen in Pearson's; however, revealed two additional significant, positive weak correlations. Because the MSCEIT and SREIS operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI, the findings from the Spearman of the significant, positive weak relationships between the MSCEIT and SREIS's first (perceiving emotions) and third (understanding emotions) branches were expected, but it is unclear why the total scores and other branches did not correlate. Possible explanations to understand the relationship between the MSCEIT and SREIS such as the different ways the MSCEIT and SREIS measure EI are addressed in the discussion section. Chapter Five addresses the meanings of these findings and whether or not they fill any gaps in the literature for the following five areas of significance: (1) emotional intelligence and psychiatric-mental health nurses (PMHN) as the target population for this study; (2) the need for reliable and valid emotional intelligence tools; (3) emotional intelligence and the nursing shortage; (4) emotional intelligence and nursing (practice, education, and research); and (5) emotional intelligence and healthcare. Chapter five concludes with implications and recommendations for future research.

### **Methodology**

A descriptive correlational design was used to examine the comparison of PMHN's EI scores on the MSCEIT to the sample on which the MSCEIT was normed, the reliability of the MSCEIT and SREIS tests, the comparison of PMHN's total and branch scores on the MSCEIT and SREIS, and to use demographic data to describe nurses from

three psychiatric nursing associations: American Psychiatric Nurses Association (APNA), International Society of Psychiatric-Mental Health Nurses (ISPN), and Moving Ahead with Advanced Practice Psychiatric Nurses in Georgia (MAAPPNG). The PMHN were recruited through e-mails, Facebook and online blog sites. The PMHN responded to two online EI surveys. The results were analyzed using SPSS 23.

**Sample description.**

Although 131 participants completed the descriptive questionnaire, not all the participants completed both the MSCEIT and SREIS. For each question in the analysis, variations in the sample size are due to incomplete responses. While comparison data were not available for current PMHN's gender, age, and race, the PMHN data in the current study were similar to the 2008 National Sample Survey of Registered Nurses (United States Department of Health and Human Services, 2010) – see Table 10. The study sample differed in the racial mix from that reported by the Registered Nurse and Licensed Practical/Vocational Nurse Workforce (U.S. Department of Health and Human Services, 2013), which included Advanced Practice nurses and used data from the U.S. Census Bureau's American Community Survey 2008 to 2010 to update the statistics of race for registered nurses and licensed practical nurses. The RN and LPN group's data on race based on the 2008 to 2010 survey indicated higher percentages of Blacks, Hispanics, and Asians than the current sample of PMHN. More research is needed to compare PMHN's trends by race.

Table 10

*Comparison of Demographics of PMHN Sample to 2008 and 2010 Surveys*

	PMHN	2008 RN Survey*	2010 RN Survey**	2010 LPN Survey**
	131	33,549	90,000	21,000
Female	90%	90.6%	90.9%	92.4%
Average Age	49.97	47	44.6	43.6
White	85.5%	83.2%	75.4%	63.2%
Black	5.3%	5.4%	9.9%	23.6%
Hispanic	3.1%	3.6%	4.8%	7.5%
Asian	2.3%	5.8%	8.3%	3.6%

\*2008 National Sample Survey of Registered Nurses of Employed Registered Nurses

\*\*U.S. Census Bureau's American Community Survey 2008 to 2010

While the educational levels of PMHN on a national basis were not available at the time of the current study, the U.S. Department of Health and Human Services (2013) reported that 54% of the registered nurse workforce held a bachelor's or higher degree. The highest educational degree reported by the nurses in the current study was higher than that of the national workforce reported in 2013. Over 89% of the PMHN participants in the current study held bachelor's degrees (24.4%), master's degrees (42.7%), or doctorate degrees (22.1%). The PMHN in the current study could have included more nurse educators, which would have made the educational level higher. The descriptive analysis did not specify work in educational settings; however, licensure question results suggest a higher percentage of advanced practice nurses which also helps explain the higher education among PMHN in the current sample (45% advanced practice and only 3.8% licensed practical nurses). In future studies delineating the type of psychiatric work setting may help to explain the educational levels found among PMHN.

In addition to levels of education, participants were asked to provide their licensure status. The responses to the question were not mutually exclusive so that a participant could indicate he or she held both a registered nurse license and an advanced practice license. PMHN responding to the questionnaires were primarily registered nurses (74.8%) and or advanced practice nurses (45%). In addition to registered nurses practicing as PMHN, 3.8% of those responding were licensed practice nurses. While current data were not accessible, the U.S. Department of Human Services reported results of a 2008 survey (United States Department of Human Services, 2010) that nurses working in the psychiatric/mental health specialty included registered nurses with associate or bachelor's degrees (10.7%) and master's or doctorate degrees (8.9%). This figure is much lower than was found in the sample for the current study. PMHN with higher levels of academic preparation and licensure may have contributed to higher levels of EI seen in PMHN in the current study compared to the MSCEIT normed sample.

Because PMHN with more experience in psychiatric nursing practice may develop strategies that improve emotional intelligence skills, knowing the years of experience of the participants was important to this study. Half of the participants had more than 10 years of experience as a PMHN while almost 45% had between 2 and 10 years of work experience as PMHN. These data suggest the PMHN in the current study were largely experienced in the care of the psychiatric patients and may have unique skills and practice in recognizing emotional issues.

### **Limitations**

The current study had several limitations related to the method and sample. The sample was non-random, voluntary, self-selected, and only part of the national



organizations were contacted due to constraints to obtain contact information. The method limited sample representativeness or generalizability. The sample of PMHN in the current study did not match the higher percentages of Blacks, Hispanics, and Asians found in the 2008 to 2010 survey of registered and licensed practical nurses (U.S. Department of Health and Human Services, 2013) so it was not representative of the general nursing population.

Some participants voiced concerns about the length of the MSCEIT (141 questions) and the time that it took to complete. One participant stated in an e-mail, “this is a long amount of time to ask of someone - I will try to fit it in but am hesitant to ask anyone I know to do it - they are busy people” (personal communication, February 25, 2015). The length of time of the MSCEIT may have caused some participants to become tired and not take the time to adequately think through each question.

Although the PMHN scored significantly higher than the normed sample of the MSCEIT, it was expected that some of the PMHN would have scored in the “expert” range due to their higher education and years of experience working in the psychiatric specialty. The finding that only one PMHN in the current study scored in the expert range may suggest that the PMHN were unfamiliar with the concept of EI and type of testing that could have affected their scores. Caruso (EI Skills Group, 2015d) acknowledged that taking the MSCEIT is a different experience for many people and some of his clients experienced negative reactions. He now gives clients written instructions on how to take the MSCEIT to help his clients react more positively to the test experience. Using these instructions in future research could help participants understand more clearly how to take the MSCEIT.

The study was a descriptive correlational study to examine the EI scores of PMHN and compare the PMHN scores on the MSCEIT to a normed sample, reliability of two EI tools, and to correlate the two EI tests' total and branch scores. In future studies, examining correlations between PMHN's age, level of education, representation of racial mix, and length of years working as psychiatric nurses with EI may provide more information to understand more fully the relationships between EI and PMHN.

### **Conclusions**

Discussion of the study's findings are presented in the context of PMHN, nursing shortage, EI tools, nursing education, practice, research and healthcare. Further discussion, implications for nursing practice and future research concludes Chapter 5.

#### **Emotional intelligence and psychiatric-mental health nurses (PMHN).**

PMHN's MSCEIT scores in the current study were significantly higher compared to the normed sample of the MSCEIT. This finding was not surprising because of the nature of PMHN's practice with psychiatric patients and emphasis of self-awareness and communication skills in PMHN education. In order to accurately assess and provide pertinent interventions with patients who have complex biopsychosocial concerns, PMHN face the challenges of not only demonstrating expertise in nursing practice but also in emotional skills (Forchuk & Boyd, 2015). Peplau (1952) believed that if nurses could be more aware of their own behaviors, they could be more aware of the messages they send to patients. The results of PMHN's EI scores contribute to what is known about EI in the field of psychiatric nursing and raises awareness of EI's relevance to psychiatric nurses' practice.

*Education and PMHN.*

Although PMHN's MSCEIT total scores in the current study were significantly higher compared to the normed sample of the MSCEIT, only one participant scored in the "expert" range. PMHN with higher levels of academic preparation, educational emphasis on emotional skills, and licensure may have contributed to higher levels of EI seen in PMHN in the current study compared to the MSCEIT normed sample. The finding that only one of the PMHN total scores were in the "expert" range may have been influenced by the lack of knowledge about EI and the inexperience of taking tests like the MSCEIT. Future studies should control for educational level and years of experience to further understand the relationship between EI and PMHN.

Nurse educators in Australia, Norway, and the United Kingdom (Akerjordet & Severinsson, 2004; Hurley, 2008; Hurley & Rankin, 2008; Warlow & Edward, 2007) advocate for EI skills to be taught to PMHN. In Australia, Hurley (2008) expressed concerns that because mental health nurses' roles were expanding, education with an emotional intelligence view was needed to more effectively prepare the mental health nurses to practice. In Norway, Akerjordet and Severinsson (2004) also saw the value of integrating EI in health care organizations and education to help nurses be more flexible to handle change and provide better quality of care in the future. The fact that the current study adds information showing that PMHN score higher on the MSCEIT test than the 5000 normed sample encourages PMHN to engage in a dialog about EI amongst PMHN in the United States. Moreover, the findings of PMHN EI scores and the characteristics of the sample may spawn a discussion of the need to introduce EI education for PMHN.

**Need for reliable and valid EI tools.**

In order to consider EI as a thread in PMHN's education, it is important to find accessible, feasible, reliable and valid EI tools to use with students. The current study sought to address this need by determining if the MSCEIT and SREIS tools were reliable instruments to test EI levels with PMHN. The MSCEIT is an EI assessment that has had limited PMHN's use in the United States so this population was an ideal group of nurses to recruit for this study. One of the aims of this study was to identify accessible, affordable, feasible, reliable, and valid EI tools that could be used in future studies to guide not only PMHN, but also all nurses in becoming aware of their emotional strengths and challenges.

The PMHN's EI scores were significantly higher than the MSCEIT normed sample. The next two aims of the study focused on the reliability of both the MSCEIT and SREIS EI tests.

***MSCEIT.***

The MSCEIT PMHN's split-half Cronbach's Alpha (.786 for part 1 and .816 for the second half) revealed a moderate to high level of internal consistency reliability. This finding was consistent with the MSCEIT authors' results for reliability (Mayer et al., 2002). Mayer, Salovey and Caruso (2002) explained that the test items of the MSCEIT are non-homogeneous because the four-branch scores of the MSCEIT draw on dissimilar tasks that include different item forms. The authors proposed using split-half reliability coefficients as the statistic of choice because of the test item heterogeneity (Mayer et al., 2003). In addition to Cronbach's Alpha, the current study sought confirmation of the Cronbach's Alpha using Spearman-Brown's coefficient (.933) and Guttman's Split-half

Coefficient (.932), which further demonstrated high level of internal consistency reliability.

The MSCEIT provided two supplemental scores: positive-negative bias and scatter score (MSCEIT et al., 2002). The positive-negative bias of the PMHN in the current study ranged from 68 to 135 maximum ( $M=103.79$ ,  $SD=11.3$ ). A score of 100 would indicate minimum bias. Although the mean of the PMHN was near 100, individual feedback in future studies would be helpful to give each PMHN with scores lower (too negative) or higher (too positive) than 100 to provide meaningful feedback. The scatter score of the PMHN ranged from 72 to 134 ( $M=98.92$ ,  $SD=11.09$ ). PMHN's scatter scores had 12 low scores (below 85), 84 with typical amount (85 – 114), and 12 with high scores (115 and over). Although the mean of the PMHN was near 100 ( $M=98.92$ ), individual feedback in future studies would be helpful to give each PMHN with scores higher than 115 (more variance) meaningful feedback.

### ***SREIS.***

The PMHN's results on the SREIS demonstrated a moderate level of internal consistency reliability (.752) (Field, 2009). The study findings were consistent with other studies that examined the SREIS' reliability and found the SREIS to have acceptable reliability (Brackett et al., 2006 [.84, .77 and .66]; Dunn et al., 2007 [.84]; Hoerger, Chapman, Epstein & Duberstein, 2012 [.83]; Kidwell et al., 2011 [.77]).

The findings of the current study added further scientific knowledge of the use of SREIS. Both the MSCEIT and the SREIS demonstrated acceptable internal consistency reliability. The question remained whether the MSCEIT and SREIS were measuring the same concept, so examining convergent validity was necessary.

***Convergent validity.***

The MSCEIT and SREIS total and branch scores did not strongly correlate in the current study. Pearson's Product-Moment Correlation was chosen to compare the MSCEIT and SREIS branch scores and total scores to determine convergent validity. Previous research using Pearson Product-Moment Correlation also compared the branch scores of the MSCEIT and SREIS (Dunn et al., 2007) and MSCEIT and another performance test using a Likert scale (Beauvais et al., 2011). Although significance was found ( $p = .01$ ) with the Pearson's correlation between the branches of the MSCEIT and the total score of the MSCEIT as well as the branches of the SREIS and the total score of the SREIS, only one significant, positive weak correlation was found between the MSCEIT and SREIS branches: the SREIS first branch (perceiving emotions) and the MSCEIT fourth branch (managing emotions),  $r(101) = .249$ ,  $p < .05$ . Although correlations were expected between the two EI tests total scores and other branches because they are based on the same conceptual model, the finding of a weak correlation between the branches one and four was not surprising because the questions in these two sections are similar.

The SREIS data did not satisfy the assumptions of a linear relationship or bivariate normality so a nonparametric test, Spearman Rank-Order Correlation, was conducted to compare with the Pearson Product-Moment Correlation findings. The Spearman Rank-Order showed a similar result between the SREIS first branch (perceiving emotions) and the MSCEIT fourth branch (managing emotions),  $r_s(101) = .256$ ,  $p < .01$ . The Spearman-Rank-Order also showed significant, positive weak relationships between the branch one of both the MSCEIT and SREIS ( $r_s(101) = .197$ ,  $p$

< .05) and the third branches of both ( $r_s(101) = .221, p < .05$ ). Because the MSCEIT and SREIS operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI, the findings of the significant, positive weak relationships between the MSCEIT and SREIS's first (perceiving) and third (understanding) branches were not surprising, but what is unclear is why the second, fourth and total scores did not correlate in this sample. The methods by which the MSCEIT and SREIS measure EI is addressed in the discussion section to understand more fully the relationship between the MSCEIT and SREIS.

#### **Emotional intelligence and the nursing shortage.**

The active supply of nurses is projected to increase by 2020, yet the supply will not be enough to meet the demands of a growing, aging population (Carnevale, Smith, & Gulish, 2015). Retaining the current workforce is one strategy for the reduction of the deficit in nurses. Retention of nurses could be affected by identifying emotional strengths and challenges in ways they relate with staff and patients. The findings of reliable and valid EI tools could help nurse managers work with their current nurses to help them recognize their own EI levels, potentially improve emotional strengths, and reduce turnover (Gerits et al., 2005; Landa and Lopez-Zafra, 2010).

#### **Emotional intelligence and nursing.**

The study findings that PMHN's EI levels were significantly higher than the normed sample of the MSCEIT encourages discussion about EI with PMHN, but it also encourages discussion among all nursing specialties. Nursing practice, education, and research are discussed.

*Nursing practice.*

The study findings that PMHN's EI levels were significantly higher than the normed sample of the MSCEIT was not surprising because of PMHN's focus on using therapeutic communication skills and improving the emotional health of their patients. Using therapeutic communication skills requires that PMHN pay attention to their own emotions as well as those of their patients'. Having the ability to recognize one's own EI may promote therapeutic communication successes. Success in work and life depend on both cognitive abilities and personal qualities that involve perception, understanding, and regulation of emotion (Cherniss, 2010).

*Nursing education.*

The current study found that PMHN's EI levels were significantly higher than the normed sample of the MSCEIT. With the awareness that PMHN have higher levels of EI, perhaps this study helps to build a case for incorporating EI testing and awareness in undergraduate curriculum in psych-mental health courses. Recognizing that the SREIS, a self-report EI test alternative to the MSCEIT, was found to be reliable in testing EI may promote access to EI testing and awareness for nursing students. These findings could affect the way nurse educators incorporate the concept of EI in their future curricula in both PMHN and other specialties. The American Psychiatric Nurses Association's Undergraduate Education Council (Sharp & Esposito, 2014) reviewed undergraduate nurses curricula throughout the United States to evaluate where psychiatric content is located. Future discussions about psychiatric content in undergraduate and graduate levels could include the concept of EI as a possible addition. Teaching the concept of



self-awareness using journaling and mindfulness exercises could enhance the education of students learning communication and therapeutic relationship content.

***Nursing research.***

Few studies were identified that addressed EI among PMHN. The findings of PMHN and EI levels in the current study add to the EI nursing research literature. The use of the Mayer-Salovey-Caruso Ability Model of EI has been the theoretical framework for many research studies including nursing studies. Roberts et al. (2010) concluded that the only logical construct to be called EI was the Four-Branch Ability Model of EI and advocated for more research to be conducted using EI tools. Nursing researchers are advocating the use of the Four-Branch Ability Model of EI (Beauvais et al., 2011; Codier et al., 2011). Combining the theories of Peplau and the Four-Branch Ability Model as conceptual frameworks for future research may help PMHN use self-awareness to understand how emotions affect their daily decisions in nursing practice.

The EI literature review had mixed reviews about the reliability and validity of the MSCEIT and SREIS. The findings about the PMHN MSCEIT and SREIS's reliability and validity add more information to the EI literature.

**Emotional intelligence and healthcare.**

EI includes both personal and interpersonal skills, which can help healthcare workers handle change more effectively and enhance the quality of care in the future creating a compassionate and healing healthcare environment (Akerjordet & Severinsson, 2004). The findings that PMHN's EI levels were significantly higher than the normed sample of the MSCEIT and that the MSCEIT and SREIS demonstrated acceptable reliability may encourage more discussions and use of EI among healthcare teams.

Nurses and other healthcare team members can take the MSCEIT or SREIS to determine their EI levels and take positive actions to identify ways to improve their personal and interpersonal skills. Positive patient outcomes need not only strong EI nurses but also an entire healthcare team that is paying attention to how their emotions affect their decision-making processes.

## **Discussion**

### **Emotional intelligence and psychiatric-mental health nurses (PMHN).**

Studies of PMHN and EI have been done in other countries (Akerjordet & Severinsson, 2004; Humpel & Caputi, 2001; van dusseldorp et al., 2010); however, little is known about EI levels among PMHN here in the United States. Psychiatric-mental health patients face unique stressors including feeling isolated due to mental illness, stigma, and guilt, and manifest intermittent periods of changeable symptoms, which require additional expertise for PMHN to exhibit to work effectively (Warelow & Edward, 2007). Psychiatric-mental health patients can exhibit challenging behaviors because of the disorders they experience like depression, anxiety, and psychosis, which can add emotional stress for mental health nurses (van Dusseldorp et al., 2010). PMHN need more than the traditional nursing skills of care and caring, but the additional expertise of EI and resilience to assist their patients to change negative experiences into positive self-enhancing ones (Warelow & Edward, 2007).

The results of the MSCEIT and SREIS EI scores of PMHN who practice in the United States provide a foundation for a greater focus on the concept of EI in PMHN's practice, education, and research. Peplau (1952) advocated that nurses model healthy behaviors. If PMHN can model effective behaviors to their patients, the patients may see

the importance of using emotions to help them relate to others in a healthier way and improve the quality of their relationships.

Peplau (1952) believed that the central task of nursing education was to aid the fullest development of the nurse as a person, which directly affected the patient through the therapeutic relationship. Raising awareness of EI for nursing students during their PMHN studies may be one way to promote Peplau's belief.

The results of the PMHN's EI scores added more information about EI and raised awareness of EI for PMHN to consider learning more about how to enhance their practice skills. Although more than 85% ( $N = 92$ ) of the PMHN sample scored average or above on the total score of the MSCEIT, it was surprising that only one of them scored in the "expert range" ( $> 131$ ) on their total scores. With their higher education and years of experience, it would have been expected that more of the PMHN's scores would have been in the 130 or higher range. The Skills Group literature (Caruso, 2012a) indicates that 2% of the normed sample scored in the "expert" group. In the Netherlands, van Dusseldorp et al. (2010) used a different EI test and theory (Bar-On), but found that mental health nurses in the Netherlands scored significantly higher than the EI of the general population. The researchers found no correlations between years of experience and age with EI. More research is needed to understand the relationship of variables such as years of experience, education, and EI scores.

### ***Education and PMHN.***

Psychiatric-mental health nursing education emphasizes the development of effective communication and self-awareness skills (Forchuk & Boyd, 2015) with Hildegard Peplau's theory of Interpersonal Relations as a foundation (Peplau, 1997).

Peplau (1952) taught that it is not just the value of the PMHN's education of communication skills and therapeutic relationships that is important for the PMHN to be effective nurses but that nursing education should focus on the development of the nurse as a person. She further advocated that the development of the nurse as a person and the nurse's ability to build a therapeutic relationship with the patient are key components that affect patients' health. The Four-Branch Ability Model of EI emphasizes the importance of perceiving, using, understanding, and managing emotions, which could guide PMHN to perform in specific situations and to build effective therapeutic relationships. Nurse educators in other countries have advocated EI to be taught to PMHN (Akerjordet & Severinsson, 2004; Hurley, 2008; Hurley & Rankin, 2008; Warlow & Edward, 2007). In Australia, Hurley (2008) promoted EI as being relevant to mental health nursing. Hurley saw the advantages of adding self-awareness exercises (e.g. mindful walks, self-genograms, and personal timelines) to mental health nurses' education to better prepare mental health nurses in changing roles, expanding community services, and increasing user expectations. In Norway, Akerjordet and Severinsson's (2004) qualitative study explored the mental health nurses' experiences of EI and concluded that EI plays a major role in the search for a deeper understanding of the mental health nurses' identity.

The current study added data about a sample of PMHN's EI levels in the United States and encouraged dialog about EI among PMHN. More research is needed to understand how adding EI content to PMHN's education could affect PMHN personal well-being and ultimately their nursing practice.

**Need for reliable and valid EI tools.**

The current study sought to address the need to find accessible, feasible, reliable and valid EI tools by determining if the MSCEIT and SREIS tools were reliable and valid instruments to test EI levels with PMHN. The literature review revealed mixed findings of the reliability and validity of the MSCEIT and SREIS. The findings in this study of PMHN raise more questions about the reliability and validity of the MSCEIT and SREIS. A comparison legend of the MSCEIT and SREIS scores is proposed later in the discussion section to bring more clarity to the interpretation of the SREIS scores. More research is needed to examine the proposed legend to determine the future use of the SREIS as an accessible and feasible option to the MSCEIT in PMHN.

***MSCEIT.***

The findings in the current study that the MSCEIT revealed a moderate to high level of internal consistency reliability adds additional knowledge for researchers using the MSCEIT as a reliable test for EI. Other factors must be addressed to determine whether the MSCEIT would be the best EI test choice for PMHN.

The positive-negative bias scores and scatter scores' means were close to 100. The positive-negative bias could indicate that if the PHMN scored lower than 100 they may interpret emotions in a more negative way or if higher than 100, they may interpret emotions in a more positive way. Interpreting emotions more negatively or positively could cause the PMHN to distort the real meaning of individuals' emotions around them which could affect relationships and patient care. The scatter score indicates the variability of the PMHN's answers. A high scatter score indicates the PMHN's scores would not be an accurate summary score of EI. Future studies that give individual

feedback could give both the positive-negative scores and scatter scores to help each PMHN be aware of their tendency to be negative or positive and assess the degree of variability.

*Reliability.*

The authors of the Four-Branch Ability Model of EI, Mayer, Salovey, and Caruso, have conducted research, written articles, and published a user's manual (2002) on the MSCEIT for the past twenty years. They maintain that the Four-Branch Ability Model of EI is a sound theoretical model and the MSCEIT is a reliable and valid instrument to measure EI. Researchers using the MSCEIT agree (Brackett et al., 2004; Brackett & Salovey, 2006; Day & Carroll, 2004; Iliescu et al., 2013; Papadogiannis, Logan, & Sitarenios, 2009).

PMHN are another population in the United States who have taken the MSCEIT and added additional support to the MSCEIT's reliability. The authors of the MSCEIT, Mayer, Salovey and Caruso, found support that the MSCEIT had full-scale reliability of .91 and the branch scores ranged from .74 to .89 with their standardization sample which supported that the MSCEIT was a reliable test at the total and branch levels (Mayer et al., 2002). The reliability of the PMHN's MSCEIT supported other studies that found satisfactory support for the reliabilities of the MSCEIT with different populations such as college students in the United States (Brackett et al., 2006), medical school students in the United States (Brannick, Wahi, & Goldin, 2011), patients with psychiatric disorders in Pittsburgh (Eack et al., 2010), incarcerated men in New Mexico (Ermer, Kahn, Salovey, & Kiehl, 2012), experts from the International Society for Research on Emotions (Mayer, Salovey, Caruso, & Sitarenios, 2003), general population in Australia

(Palmer, Gignac, Manocha, & Stough, 2005), undergraduate students in Florida (Rossen, Kranler, & Algina, 2008) and female student health professionals in Spain (Ruiz-Aranda, Extremera, & Pineda-Galan, 2013).

Other researchers have criticized the MSCEIT's reliability and validity and called for more research (Brannick et al., 2011; Eack et al., 2010; Fan et al., 2010; Follesdal and Hagtvet, 2009; Gignac, 2005; Keele and Bell, 2008; Maul, 2011; Maul 2012a; Maul, 2012b; Maul, 2012c; Palmer et al., 2005; Roberts et al., 2006; Rossen et al., 2008). The current study of PMHN adds more research to the scientific knowledge base of EI, which is a relatively new concept.

*Factors that affect the future use of the MSCEIT.*

The MSCEIT could be used in future EI studies to guide populations such as PMHN to take and identify their emotional strengths and challenges. Cost, access, and feasibility of use have been concerns using the MSCEIT. If a free EI test could be used and demonstrate concurrent validity with the MSCEIT, then nurse educators and nurse managers could have easier access and could use the EI tests to have a base EI level on nursing students or nurses to gain insight into their emotional strengths and challenges. The costs of administering and providing feedback are considerations to the MSCEIT's future use. The authors of the MSCEIT, Mayer, Salovey and Caruso, assigned copyright to the Multi-Health Systems Company (MHS) in order to receive support and technical resources (EI Skills Group, 2015d). MHS provides a variety of psychological assessments and services including the MSCEIT (Multi-Health Systems [MHS], 2015a). MHS restricts MSCEIT test purchasers and users to three categories: decision-making (must have completed a minimum of two university courses in tests and measurement),

research (college or university faculty, professional staff of hospitals and business organizations or students enrolled in graduate programs) or library reference purposes (MHS, 2015c). Individuals can take the MSCEIT through private companies that can cost \$575 for the individual test and feedback (EI Skills Group, 2015c). MHS does offer researcher and educational discounts up to 30% for those who qualify (MHS, 2015b).

The most valuable features of using the MSCEIT are the feedback resources. The MSCEIT resources provide the test taker valuable feedback to apply, but the cost per individual is \$57 without the 30% discount (MHS, 2015d). The resource packet provides a detailed report including suggestions and details of the individual's abilities (EI Skills Group, 2015b). One of the purposes of the current study was to examine the MSCEIT's reliability with PMHN, so the Resource Packets were not used. Future research on EI and choosing which EI tool to use would depend on the purposes of the research.

*Convergent validity of the MSCEIT.*

Convergent validity is the correlation between different EI measures (Trochim, 2001) like the MSCEIT and the MEIS (precursor to the MSCEIT). Several studies have compared the MSCEIT to other EI tests (Brackett et al., 2006; Goldenberg, Matheson, & Mantler, 2006; Webb, 2013) to address convergent validity and one compared the MEIS to the MSCEIT (Maul, 2011). Goldenberg, Matheson, and Mantler (2006) assessed the patterns of convergent validity for the MSCEIT and a different self-report measure of EI (Schutte et al., 1998). Neither the total scores nor the corresponding dimensions on both measures were significantly correlated.

Brackett and Mayer (2003) found that the MSCEIT (ability model) and self-report EI tests (Emotional Quotient Inventory and the Self-Report EI test) were weakly related



(lack of convergence) partly due to the distinct ways the constructs were defined.

Brackett et al. (2004) found the MSCEIT scores were only modestly correlated with Verbal SAT scores, which suggest that the MSCEIT and Verbal SAT scores are measuring different concepts.

### ***SREIS.***

The current study findings matched other studies that examined the SREIS' reliability and found the SREIS to have acceptable reliability (Brackett et al., 2006; Dunn et al., 2007; Hoerger, Chapman, Epstein & Duberstein, 2012; Kidwell et al., 2011). The finding that the SREIS in the current study revealed a moderate level of internal consistency reliability adds additional knowledge for researchers using the SREIS as a reliable test for EI. Other factors must be addressed to determine whether the SREIS would be the best EI test choice.

### ***Reliability of SREIS.***

Brackett et al. (2006) designed the SREIS using the same theoretical framework (Mayer-Salovey-Caruso Four-Branch Ability Model) on which the MSCEIT was based. The SREIS is a self-report EI tool that has 19 questions that make up the four EI branches. Brackett et al. used both the MSCEIT and the SREIS tools to examine the relationship between EI and social functioning in several studies. In the first study, the researchers found that the MSCEIT and SREIS scores were not strongly related and in the third study the MSCEIT and SREIS scores were unrelated.

*Effect of differences in measurement techniques between the MSCEIT and SREIS.*

The findings from the current study suggest weak correlations between the MSCEIT and SREIS. The MSCEIT and SREIS have several differences in the way they measure EI. The MSCEIT is an ability test where there are right and wrong answers. The MSCEIT measures how well people perform tasks and solve emotional problems versus their subjective assessment of their emotional skills (Mayer et al., 2002). The SREIS is a self-report survey that asks the participant how they perceive their EI. The results of self-report tests may demonstrate a bias (Roberts et al., 2010) or distortion because the respondent may answer the questions based on a motive such as appearing qualified for a particular job (Christiansen, Janovics, & Siers, 2010; Day & Carroll, 2007; Grubb & McDaniel, 2007).

Brackett and Mayer (2003) found that the MSCEIT (ability model) and self-report EI tests (Emotional Quotient Inventory and the Self-Report EI test) were weakly related. The researchers also found that the low correlations between ability and self-report measures may have been due to their different measurement approaches (performance based versus self-report).

Webb et al. (2013) found the SREIS and another self-report EI test, EQ-I were highly correlated ( $r = .50$ ;  $p < .01$ ) in their study of 65 people. The researchers interpreted these findings as the effect of shared method variance (self-report versus the MSCEIT's performance-based method) and the concern that self-report measures are limited by people's ability to accurately assess and report on EI.

Self-report measurement (SREIS) versus ability testing (MSCEIT) is a consideration as future research compares the results of the MSCEIT and SREIS. Convergent validity is another important aspect to consider when addressing the usefulness of the SREIS versus the MSCEIT.

*Convergent validity between the SREIS and MSCEIT.*

The findings from the current study are compared to other studies that have run correlations between the MSCEIT and SREIS total scores (Brackett et al., 2006; Webb et al., 2014). In the first study, Brackett et al. (2006) found significant correlation between the SREIS and MSCEIT, but the relationship was weak,  $r(287) = .19, p < .01$  (Brackett et al., 2006). Brackett et al. concluded, “self-rated EI may not be a good proxy assessment for ability EI” (2006, p. 785). In the second study, Brackett et al. (2006) used the SREIS and MSCEIT and found,  $r(327) = .07, p < .05$ , “confirming that self-report and performance measures likely are tapping into different psychological processes” (p. 786). In the third study, as predicted the SREIS and MSCEIT scores were unrelated,  $r(50) = .03$ .

Webb et al. (2013) replicated and expanded previous research on EI measures and intelligence measures with 65 participants in the Boston area to take the MSCEIT and SREIS as well as other tests. The MSCEIT and SREIS significantly correlated ( $r = .32; p = .011$ ). The MSCEIT did not correlate with other self-report EI tests (EQ-I,  $r = .11; p = .379$ ). Webb et al. also acknowledged that due to their small sample size, 65, statistical power was limited and affected the generalizability of their findings. They called for more research studies to directly compare competing EI measures’ psychometric characteristics.

*PMHN results on convergent validity.*

The Pearson Product-Moment Correlation Coefficient was used to compare two other studies comparing the MSCEIT with another self-administered tool of a four-point rating-scale (Beauvais et al., 2011) and in a study comparing the total scores of the SREIS and MSCEIT as well as the fourth branches of each (Dunn et al., 2007). In order to use the Pearson correlation, four assumptions had to be met: The variables should be measured at the interval or ratio level, a linear relationship has to be between the two levels, no significant outliers are present, and the assumption of bivariate normality is satisfied (Field, 2009). The MSCEIT's EI score is an example of an interval level variable (continuous variables). The SREIS uses a Likert scale starting from "very inaccurate", "moderately inaccurate", "neither nor", "moderately accurate" and "very accurate". The literature is mixed whether Likert scales are considered "continuous" or "nominal" (Laerd, 2013). The argument is that a Likert scale could be ordinal or interval (Newsom, n.d.). If there is equal distance between each value and the value has a numeric score, a researcher could use the measure as an interval or continuous variable (Newsom, n.d.). Because the SREIS data did not satisfy the assumptions of a linear relationship or bivariate normality, a nonparametric test, Spearman Rank-Order Correlation, was also run to compare with the Pearson's correlation's findings. The Spearman Rank-Order correlation calculates a coefficient,  $r_s$  which measures the strength and direction of the association between either one ordinal and one continuous variable, two continuous variables, or two ordinal variables (Laerd Statistics, 2013). The Spearman Rank-Order also has three assumptions that must be met: the variables are either continuous or ordinal, variables represent paired observations, and a monotonic relationship (the value

of the one variable increases or decreases with the other variable) occurs between the two variables. The Spearman Rank-Order showed a similar result with the SREIS Branch one (perceiving) and the MSCEIT Branch four (managing),  $r_s(101) = .256, p < .01$ . The Spearman-Rank-Order also showed some significant, positive weak relationships between the branch one (perceiving) of both the MSCEIT and SREIS and the third (understanding) branches of both ( $r_s(101), p < .05$ ).

The finding that Pearson's Product Correlation showed a weak correlation,  $r(101) = .249, p < .05$ , between the branch one (perceiving) of the SREIS and branch four of the MSCEIT (managing) was not surprising. The four items in the SREIS branch one (Appendix A) asked the participant to respond to how they perceive others' emotions (how well they recognize other's emotions, aware of non-verbal messages others send, identify other's lying by facial expressions, and impressions of other's feelings). The fourth branch of EI, managing emotions, has two subsets: social and emotional management (Brackett & Salovey, 2006). Social management involves how a person manages the emotions of others and emotional management involves how a person regulates his or her own emotions (Brackett & Salovey, 2006). For example, a participant will read a short story describing a scenario. The participant will be asked to determine how effective several different courses of action would be in coping with the emotions of the story. How the participant answered the questions in branch one in the SREIS would be similar questions to consider in the MSCEIT's branch four questions so a correlation would be expected.

The findings from the Spearman-Rank-Order of significant, positive weak relationships between the branch one (perceiving) of both the MSCEIT and SREIS and

the third (understanding) branches of both ( $r_s(101), p < .05$ ) were expected because both tests asked questions about perception of emotions (branch one) and questions of understanding knowledge (branch three). What is not clear is why the second (using) and fourth (managing) branches did not correlate. More research is needed to explore the relationship between the branches of the MSCEIT and the SREIS.

Although the MSCEIT and SREIS total scores and branches did not demonstrate strong correlations, examining the meaning of these scores using the MSCEIT's scoring legend might be helpful. The MSCEIT has extensive literature for feedback for the respondents (Caruso, 2012a). Respondents can read about their scores on the total score and on each of the branches to understand how they compared to the normed sample. The MSCEIT has right and wrong answers that were determined by experts and scored either with the expert scores or 5000 normed sample. The MSCEIT authors use this scale to explain the meaning of the scores of the MSCEIT (Caruso, 2012a):

<u>Range</u>	<u>Score</u>
Improve	< 70
Consider Developing	71 – 89
Competent	90 – 109
Skilled	110 to 129
Expert	130 >

The MSCEIT legend is explained in the workshop materials so test administrators can give meaningful results to the respondents (Caruso, 2012a). If a respondent scored in the “consider developing” overall, the MSCEIT feedback would give written strategies to address each branch's content to help the respondent address emotional skill deficiencies

(Caruso, 2012b). For instance, if a respondent scored low on the first branch (perceiving), respondents are given written information with statements such as: You may not accurately ‘read’ people or attend to non-verbal cues, or you may be too positive or negative (Caruso, 2012b, no. 39). The test administrator would then discuss with the respondent the results and how to make positive changes. For each branch, the test administrator can give written feedback to help the respondent understand the results of the test. If a respondent scored in “consider developing” (< 70) in the overall score, strategies are given to help the respondent achieve positive outcomes in the future (Caruso, 2012b, no. 14). Respondents would be encouraged to consider how emotions affect their decisions. Specific feedback from the MSCEIT to help nurses improve emotional skills in relationships with patients aligns well with Peplau’s theory (1952) encouraging nurses to work on self-awareness to improve therapeutic relationships with patients.

Although the MSCEIT literature has the score legend to interpret the scores, no literature was found on how to interpret the SREIS total or branch scores. One of the researchers involved with the SREIS research stated in an e-mail that the SREIS had been used as a research instrument, but aligning the SREIS scores with the MSCEIT scores “would be a novel application of the SREIS to my knowledge” (personal communication, Lori Nathanson, August 24, 2015).

The SREIS test (See Appendix 1) uses a Likert scale that asks responders to answer whether each statement of an emotional ability describes the respondent very inaccurately (1), moderately inaccurately (2), neither nor (3), moderately accurately (4), and very accurately (5). Each of the 19 questions matches one of the four branches of the

MSCEIT. Four of the questions on the SREIS are reversed, so the administrator has to recode those four questions when averaging the final scores of the total and branches.

The questions in each branch are averaged to determine the branch score. The total score on the SREIS is an average of the 19 questions.

Each question on the SREIS corresponds to one of the branches of the Four-Branch Ability Model of EI and the MSCEIT. If the respondent answers a 1 (very inaccurate) or 2 (moderately inaccurate) on the SREIS that suggests they do not believe they have the emotional ability the question is asking. If they answer 4 (moderately accurate) or 5 (very accurate), that suggests they believe they do have the emotional ability the question is asking. If they answer with a 3 (neither nor), they may not know whether they have the emotional ability or not. This suggests that they may not know about their own emotional ability, they may not have confidence in their emotional ability, or they may not understand what the question is asking.

An example of the process of comparison of the first question on the SREIS to the MSCEIT legend score follows. If respondents answer the first question on the SREIS, “By looking at people’s facial expressions, I recognize the emotions they are experiencing”, with a 1 (very inaccurate) or 2 (moderately inaccurate), that suggests they do not believe they have the ability to recognize emotions. If they answer 4 (moderately accurate) or 5 (very accurate), that suggests they believe they do have the ability to recognize emotions. If they answer with a 3 (neither nor), they may not know whether they have the ability or not. This suggests that they may not know about their own ability to perceive emotions, they may not have confidence in their ability to perceive, or they may not understand what the question is asking. The MSCEIT questions in the first



branch (perceiving) ask the respondents to view a face or a picture and choose which emotions the face or picture represents. The normed group had 5000 people answer the MSCEIT questions and the PMHN’s answers were scored on how they were compared to the normed group’s answers.

Although the Pearsons or Spearman did not show that the total scores of the SREIS and MSCEIT correlated, significant, weak positive relationships were identified between the first and third branches. To understand this relationship, the following legend is proposed:

	MSCEIT	SREIS
<u>Range</u>	<u>Score</u>	<u>Score</u>
Improve	< 70.....	1 or 2
Consider Developing	71 – 89.....	3
Competent	90 – 109 .....	4
Skilled	110 to 129.....	5
Expert	130 >.....	5

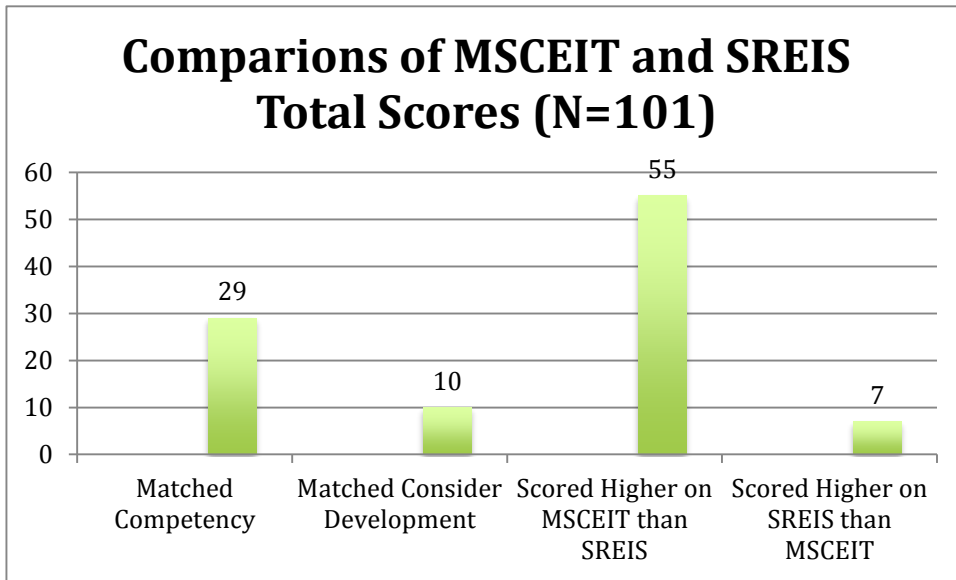
A score of 1 (very inaccurate) or 2 (moderately inaccurate) on the SREIS would compare to the MSCEIT range of less than 70 – “improve”. The respondent on the SREIS is stating that they are not accurate for that emotional ability which would be matching the category on the MSCEIT: “improve”. If the respondent marked a “3” on the SREIS, the respondent is indicating “neither nor” which means they do not know whether they have the emotional ability. This, too, is a concern that the respondent is not aware whether they have the emotional ability or not, so it would match the category on the MSCEIT: “consider developing”. If respondents marked a “4” on the SREIS, the

respondents are indicating they are “moderately accurate” which matches the category on the MSCEIT: “competent”. If the respondent marked a “5” on the SREIS, the respondent is indicating “very accurate” in their emotional ability which matches the category on the MSCEIT: “skilled” or “expert”. The SREIS scores would then have more meaning for the respondent to consider whether they need development in emotional skills or have EI abilities.

Bar graphs were made to compare the results of the PMHN total and branch scores on both the MSCEIT and SREIS in the current study using the legend that compares their scores. The total branch score Table 11 is below and the branch scores are in Appendix M.

Table 11

*Bar Graph of the PMHN’s MSCEIT and SREIS Total Scores*



When the MSCEIT total scores are compared to the SREIS total scores, 39 (38.6%,  $N = 101$ ) of the PMHN scores on the MSCEIT matched the SREIS scores using the above legend. PMHNs scoring 4 (moderately accurate) on the SREIS matched “competent” (90

to 109) on the MSCEIT (29 PMHNs, 28.7%). Ten of the PMHNs scored 3 (neither nor) on the SREIS, which matched the MSCEIT scores of “consider developing” between 70 and 89. This finding suggests that 38.6% of the PMHN scores were similar between the MSCEIT and SREIS for “competency” and “consider development”. The finding that 55 (42%) PMHN scored higher on the MSCEIT than the SREIS suggests that PMHN performed better on a skills test than what they believed their ability was. Seven (5%) PMHN perceived their skills to be higher than the MSCEIT test showed.

For the total, first (perceiving), second (using), third (understanding) and fourth (managing) branches of the MSCEIT and SREIS, the majority of scores either matched or the PMHN scored higher on the MSCEIT than their self-report on the SREIS (94, 79, 95, 88, and 92 respectively,  $N = 101$ ). This finding suggests that PMHN may not have experience in evaluating their own EI skills or were unfamiliar with the concept of EI. In the comparison of the MSCEIT and SREIS total scores, 10 of the “consider developing” of the SREIS scores matched the respondents’ SREIS scores suggesting that these ten respondents were aware of the challenges with emotional skills. The concern is that seven of the 101 perceived (SREIS) higher total scores on emotional skills than they demonstrated on the MSCEIT. If only the SREIS was used, these nurses would score “competent” and maybe not consider applying new strategies.

More research is needed to compare the MSCEIT and SREIS scores using the MSCEIT and SREIS legend comparisons. If the SREIS and MSCEIT legends could be compared as proposed in this study, nurse educators and administrators could use the SREIS that is more accessible and feasible than the MSCEIT. If the Four-Branch Ability Model of EI was presented to PMHN, they may have a context to learn and understand

more about their emotional abilities to raise their self-awareness of their emotional skills. Having an understanding of the Four-Branch Ability Model of EI could help the PMHN answer the questions on the SREIS more accurately.

### **Emotional intelligence and the nursing shortage.**

Using the MSCEIT or SREIS to measure EI levels could provide possible solutions in helping nurses understand the effects of EI and in the future help educate and retain the current workforce in nursing. Carnevale et al. (2015) discuss in their report on the supply and demand of nursing through 2020 that only 70% of licensed nursing professionals work in nursing. The authors cite that stressful working environments, long hours, erratic schedules, economic conditions and personal circumstances influence many nurses to move in and out of nursing. They also found that employment settings affected job satisfaction with registered nurses working in academic education programs, ambulatory care, home health settings reporting the highest rate of job satisfaction and nurses working in nursing homes associated with the lowest rate of satisfaction. Data from the 2008 National Sample Survey of Registered Nurses (United States Department of Human Services, 2010) revealed similar findings for why nurses were not working in nursing that included retirement, personal and family reasons, and workplace reasons. They also found that 41% of registered nurses under 50 and 35.5% of registered nurses 50 and older reported burnout, stressful work environment, and poor management as the causes to not work in nursing.

PMHN and nurses in other specialties could take the information about their emotional strengths and challenges and perform strategies to increase self-awareness (e.g. journaling) and minimize the nursing challenges (e.g. aware of being overly positive or

negative). The very nature of the complexity of the nursing shortage requires multiple approaches to understanding and implementing solutions to the problem. Having reliable and valid EI tools brings to the forefront another possible solution, EI skills, and proposes that with more knowledge and understanding about EI and the use of reliable and valid EI tools, strategies can be recommended to address nursing shortage variables. Addressing the relationship of EI skills and the nursing shortage can make significant contributions to the solutions that could affect the quality of nursing practice, education, and research.

### **Emotional intelligence and nursing and healthcare.**

EI has been identified as an important construct for nursing practice and as important as practical expertise (Codier, 2010; Wright, 2009). In the constantly changing and stressful healthcare environment, nurses are faced with ethical situations that can negatively affect patient outcomes. Using the MSCEIT or SREIS EI tools could give nurses more resources to help them be proactive in understanding how their emotions can be valuable assets in the ethical-decision making processes. As they study ethical-decision making nursing students and nurses would benefit from exercises that help them identify and respond to their own as well as patients' and families' emotions. Nurses need to demonstrate practical skills as well as emotional skills (Freshwater & Stickley, 2004) in order to perform the essence of nursing: protect, promote, and optimize patient health (American Nurses Association, 2010a). Patients' outcomes could be negatively affected when a lack of emotional skills influences a nurse's well-being (Codier, Muneno, & Freitas, 2011; McQueen, 2004). In order to provide high quality patient-centered care in challenging environments, nurses need safe and practical skills as well as effective EI skills (Freshwater & Stickley, 2004). If PMHN could take the MSCEIT or SREIS, they

could become more self-aware of their own strengths and challenges and take steps to learn strategies to help them be more effective nurses.

Psychiatric course textbooks emphasize therapeutic communication skills and the importance of the nurse-patient relationship (Forchuk & Boyd, 2015). One text states, “Without self-awareness, nurses will find it impossible to establish and maintain therapeutic relationships with patients” (Forchuk & Boyd, 2015, p. 104). As nurse educators contemplate curricula changes to possibly include EI as a thread throughout the curriculum, reliable and valid tools are necessary to measure student nurses’ EI levels. Students who know their own EI scores may become more self-aware of any emotional and relational challenges and develop strategies in school to better prepare them for their nursing careers. The MSCEIT and SREIS could be possible options to help nurse educators identify students’ EI levels.

The education of advanced practice nurses in psychiatric nursing in the United States includes theory courses to emphasize psychiatric theories such as Peplau’s theory on the nurse-patient relationship and self-awareness, but not all generalist nurses receive equal amounts of psychiatric content such as therapeutic communication skills in their nursing education (Sharp & Esposito, 2014). The American Psychiatric Nurses Association’s Undergraduate Education Council did a survey in 2014 to understand more about the placement of psychiatric content in undergraduate nursing education (Sharp & Esposito, 2014). The Education Council found a variety of ways psychiatric content was presented in nursing curricula, which included psychiatric content integrated throughout the curriculum and stand-alone psychiatric courses with clinical hours. But some curricula were not clear how much psychiatric content was addressed if at all. The

findings about the PMHN's EI levels and reliable EI tools can encourage more dialog among PMHN and nurse educators as well.

The current study supports the Mayer-Salovey-Caruso Four-Branch Ability Model of EI to be used in future nursing EI research to provide consistency in reporting and promoting EI strategies. Knowledge from this study supports an EI model and reliable and valid EI assessment tools to guide future nursing studies using different nursing specialties and students that could impact the future education of all nurses. Having an EI model and reliable and valid EI assessment tools could also positively impact healthcare.

The demand for healthcare services is growing (Carnevale et al., 2015). Between 2015 and 2030 more than 70 million baby boomers will be in the 65 and older age group, which accounts for a large percentage of healthcare needs (Carnevale et al., 2015). The expansion of health coverage is projected to also cause an increase in the growing demand of healthcare needs (Carnevale et al., 2015). Healthcare workers, including nurses, need to use emotional skills in order to practice effectively.

### **Implications/Recommendations for Nursing Practice, Education and Research**

More research is needed to understand the characteristics that influence PMHN's EI. If a greater understanding of EI is available, practice sites and educational institutions could use this information to develop strategies that aid nurses to address challenges in their communication and emotional skills. The MSCEIT feedback could be used to give each nurse feedback to enhance their communication skills, which could then affect their nursing care. A nurse who scores low on the first branch of the MSCEIT (perceiving) may mis-read people (Caruso, 2012a). Awareness that this may be a challenge for this

nurse can help this nurse pay closer attention to people's non-verbal communication and clarify with the person before making judgments. Awareness of these strategies could help this nurse be a more effective communicator, which could affect the care patients receive.

The research is mixed on whether emotional intelligence scores can improve with interventions (Caruso, 2012a; EI Skills Group, 2015a). Self-awareness of EI skills may be a key to help PMHN become more effective nurses. Self-awareness is a primary concept in building therapeutic relationships for PMHN (Peplau, 1952). Because EI is defined and measured as a set of abilities or skills by the Four-Branch Ability Model of EI, the focus on EI skills and strategies through self-awareness can be an effective way to approach helping PMHN improve their emotional skills.

If PMHN knew more about the Four-Branch Ability Model of EI, they may be able to evaluate their emotional skills more effectively. Future research could incorporate EI education as an intervention to emphasize self-awareness in educational and medical settings. Nurse educators and administrators in healthcare facilities could use the feedback from the MSCEIT to identify strategies to improve nurse-patient relationships through helping nurses be aware of their emotional strengths and challenges.

Although the Pearson Product-Moment Correlation and the Spearman-Rank Order did not demonstrate strong correlations, the PMHN's SREIS scores and MSCEIT scores could be compared to provide more meaning to the relationship between the two tests. No literature was found to explain the meaning of the scores of the SREIS. To compare the SREIS scores with the MSCEIT scores to have more meaning, the following legend is proposed for future research to incorporate:



MSCEIT	SREIS
Improve < 70.....	1 or 2
Consider Developing 71 – 89.....	3
Competent 90 – 109 .....	4
Skilled 110 to 129.....	5
Expert 130 >.....	5

If an educator or nurse administrator wants to use an accessible, feasible, and reliable EI tool to determine a base EI score for their nurses, the SREIS may be a viable option to consider. If the educator or nurse administrator wants to have resources that give individual feedback (e.g. positive-negative score, scatter score, individual scores and strategies), the MSCEIT may offer more resources and be a better option than the SREIS.

PMHN are faced with challenging patients who suffer with emotional challenges (Cleary et al., 2011). Peplau (1952) advocated that if PMHN could model their own behaviors of effective communication to their patients through their relationships, patients may see the importance of using emotions to help them relate to others in a healthier way and improve the quality of their own future relationships. Using the Four-Branch Ability Model of EI may be one theory for PMHN and all specialties of nurses to use to not only enhance their own emotional abilities, but their patients’ well-being as well.

**Summary of Chapter Five**

The purpose of this descriptive correlational study was to compare the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) EI level of PMHN to the normed sample of 5000 respondents, to evaluate the internal consistency reliability of the

MSCEIT and the Self-Rated Emotional Intelligence Scale (SREIS) with PMHN, and to determine if there was a relationship (convergent validity) between the PMHN's MSCEIT EI scores (total and branch) and the PMHN's self-awareness of EI skills using the SREIS scores (total and branch). The study used Peplau's theory of Interpersonal Relations and the Mayer-Salovey-Caruso Four-Branch Ability Model of EI as conceptual frameworks to guide the research. Two instruments were used in the study: the MSCEIT and the SREIS. Both instruments are based on the Mayer-Salovey-Caruso Four-Branch Ability Model of EI (Brackett et al, 2006; Mayer et al., 2004); however, they differ in accessibility, cost, feasibility of use, and method of measurement (performance versus self-report).

The PMHN had a higher mean EI measured by the MSCEIT ( $M = 102.63$ ) compared to that of the 5000 in the normed sample ( $M = 100$ ), which indicated a significant difference ( $p < .05$ ) between the mean scores. Both the MSCEIT and SREIS demonstrated moderate or high levels of internal consistency reliability. Similar to other research studies (Beauvais et al., 2011; Dunn et al., 2007), Pearson's Product-Moment Correlation was used and showed one significant, positive weak correlation between the MSCEIT and SREIS branches: the SREIS branch one (perceiving emotions) and the MSCEIT branch four (managing emotions),  $r(101) = .249, p < .05$ . Significance was found ( $p < .01$  or  $p < .05$ ) between the branches of each test and with the total scores. Spearman Rank-Order showed a similar result between the SREIS branch one (perceiving emotions) and the MSCEIT branch four (managing emotions) as the Pearson's correlation: a significant, positive weak correlation,  $r_s(101) = .256, p < .01$ . Spearman Rank-Order also showed significant, positive weak correlations for the first

(perceiving emotions),  $r_s(101) = .197, p < .05$ , and third (understanding emotions),  $r_s(101) = .221, p < .05$ , branches of the MSCEIT and SREIS. Because the MSCEIT and SREIS operationalize EI using the same theoretical model, the Four-Branch Ability Model of EI, the findings from the Spearman of the significant, positive weak relationships between the MSCEIT and SREIS's first (perceiving emotions) and third (understanding emotions) branches were not surprising.

If PMHN knew more about the Four-Branch Ability Model of EI, they may be able to evaluate their emotional skills more accurately through taking a self-report EI test like the SREIS. Future research could incorporate EI education as an intervention in educational and medical settings. Self-awareness of EI skills may be necessary to help PMHN become more effective nurses. Self-awareness is a key concept in building therapeutic relationships for PMHN (Peplau, 1952). Because EI is defined and measured as a set of abilities or skills by the Four-Branch Ability Model of EI, the focus on EI skills and strategies through self-awareness can be an effective way to approach to help PMHN improve their emotional skills. More research is needed to understand the characteristics that influence PMHN's EI and to evaluate more fully the convergent validity of the MSCEIT and SREIS.

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## Appendix A

**Self-rated Emotional Intelligence Scale (SREIS)**

The following set of items pertains to your insight into emotions. Please use the rating scale below to describe how accurately each statement describes *you*. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. Please read each statement carefully, and then write the letter that corresponds to how inaccurately or accurately each statement describes you.

Very Inaccurate	Moderately inaccurate	Neither nor	Moderately accurate	Very accurate
1	2	3	4	5

Number	Answer	Item Wording
1.		By looking at people's facial expressions, I recognize the emotions they are experiencing.
2.		I am a rational person and I rarely, if ever, consult my feelings to make a decision (r).
3.		I have a rich vocabulary to describe my emotions.
4.		I have problems dealing with my feelings of anger (r).
5.		When someone I know is in a bad mood, I can help the person calm down and feel better quickly.
6.		I am aware of the non-verbal messages other people send.
7.		When making decisions, I listen to my feelings to see if the decision feels right.
8.		I could easily write a lot of synonyms for emotion words like happiness or sadness.
9.		I can handle stressful situations without getting too nervous.
10.		I know the strategies to make or improve other people's moods.
11.		I can tell when a person is lying to me by looking at his or her facial expression.
12.		I am a rational person and don't like to rely on my feelings to make decisions.
13.		I have the vocabulary to describe how most emotions progress from simple to complex feelings.
14.		I am able to handle most upsetting problems.


15.		I am not very good at helping others to feel better when they are feeling down or angry (r).
16.		My quick impressions of what people are feeling are usually wrong (r).
17.		My “feelings” vocabulary is probably better than most other persons’ “feelings” vocabularies.
18.		I know how to keep calm in difficult or stressful situations.
19.		I am the type of person to whom others go when they need help with a difficult situation.

**Scoring Key: First reverse score items with “r” (1=5, 4=2, etc.), then add up scores for each area and create average. Compare across areas.**

Branch 1: Perceiving                    1, 6, 11, 16r  
 Branch 2: Using                        2r, 7, 12  
 Branch 3: Understanding            3, 8, 13, 17  
 Branch 4: Regulating (self)        4r, 9, 14, 18  
 Branch 4b: Regulating (others)    5, 10, 15r, 19

## Appendix B

## Permission to Use the SREIS

Re: SREIS  
Delaney, Sarah [sarah.delaney@yale.edu]  
You replied on 10/29/2013 1:34 PM.  
Sent: Tuesday, October 29, 2013 1:23 PM  
To: [Traci T. Sims](#)  
Attachments:  [SREIS\\_with\\_scoring\\_2011.pdf \(80 KB\)](#) [[Preview on web](#)]

Dear Traci,

Please see attached for SREIS Scale. You have Dr. Brackett's permission to use the scale.

Best of luck with your research,  
Sarah

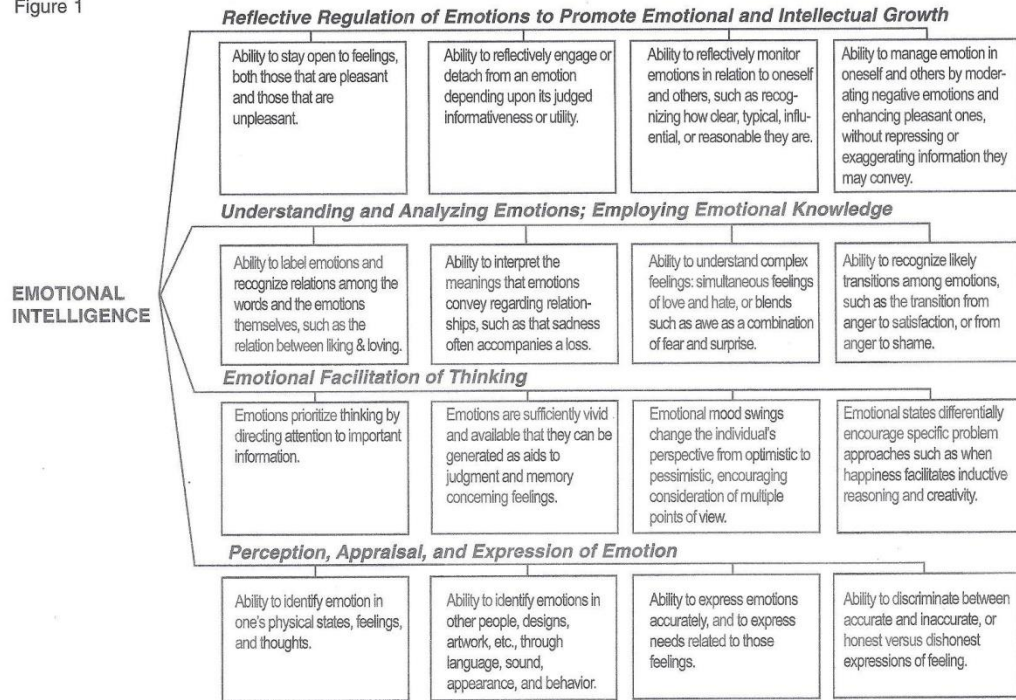
----

Sarah Delaney  
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Appendix C

Figure 1



Emotional Intelligence: Key Readings on the Mayer and Salovey Model

Four-Branch EI Ability Model: Relationship Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.). *Emotional development and emotional intelligence*. New York: Basic Books.



## Appendix D

Participation Information for the Research Study: Relationship between Emotional Intelligence and Leadership Behaviors of Mental Health Nurses

You are choosing to participate in a research study to determine if there is a relationship between emotional intelligence and leadership behaviors of mental health nurses. Participation in this study is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. We will keep your records private to the extent allowed by law.

To complete the questionnaire and emotional intelligence test, type in the address of the survey monkey first with your identification number:

1. Demographic Information and the Leader Behavior Description Questionnaire - Self:

Survey Monkey: <https://www.surveymonkey.com/s/GZZ3TXS?c=>

2. When you click “done”, the Mayer, Salovey, Caruso Emotional Intelligence Test will automatically come up. Put in access code: 17585-001-MHN . Your password is:\_\_\_\_\_.

You can take at a later time at this address:

<http://www.mhsassessments.com>

Please choose from one of the following responses:

1. \_\_\_\_\_ I do not want to participate in this study.
2. \_\_\_\_\_ I do want to participate, but I do not want individual feedback.
3. \_\_\_\_\_ I do want to participate and I want both written and verbal feedback

Contact phone number \_\_\_\_\_ Identification

Number \_\_\_\_\_

## Appendix E

**CONSENT COVER LETTER**

**Title of Research Study:** Relationship between Emotional Intelligence and Leadership Behaviors of Mental Health Nurses

**Researcher's Contact Information:** Traci T. Sims at \_\_\_\_\_;

[tsims720@comcast.net](mailto:tsims720@comcast.net)

**Introduction**

You are being invited to take part in a research study conducted by Traci T. Sims of Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

**Description of Project**

The purpose of the study is a descriptive correlational study with three aims:

1. Is there a relationship between emotional intelligence and leadership behaviors in mental health nurses?
2. Is the Mayer, Salovey, Caruso Emotional Intelligence test (MSCEIT) reliable as an instrument to measure emotional intelligence in mental health nurses?
3. Is the Leader Behavior Descriptive Questionnaire – Self (LBDQ) a reliable and valid instrument to measure leadership behaviors in mental health nurses?

**Explanation of Procedures:**

You will be given a Participant Form that gives you three choices:

1. \_\_\_\_\_ I do not want to participate in this study.
2. \_\_\_\_\_ I do want to participate, but I do not want personal feedback.

3. \_\_\_\_\_ I do want to participate and I want both written and verbal feedback  
Contact phone number \_\_\_\_\_

If you give consent, you can access the two internet addresses and confidential identification numbers to use to log-on for each test. The first internet address is a Survey Monkey with the Leader Behavior Description Questionnaire-Self and will have six demographic questions (age, gender, race, years worked as a nurse, staff nurse, nurse manager, or nurse administrator, and years worked at the present mental health facility) and 40 items using a likert scale (always, often, occasionally, seldom or never) which takes about 10 minutes to take. The data will be collectly in an anonymous manner and IP addresses will not be collected. When you finish this questionnaire and click “done”, the second internet address will automatically appear which is the Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT). Put in the code and password from your individual Participation Form. You can wait if you prefer and log on to the Multi-Health Services (MHS) website at a later time using the website address on your Participation Form. The MSCEIT is an ability-based measure of emotional intelligence. It has 141 items and should take approximately 30 – 45 minutes to take. The MHS does collect IP addresses, but it holds any and all information collected in the strictest of confidence and limits the use of any such data to purposes outlined and ensures both security and privacy. All data from both websites will be anonymous.

### **Time Required**

The time to complete the two online tests will be approximately one hour.

### **Risks or Discomforts**

In this study, you may have minimal emotional risk due to self-discovery.

### **Benefits**

We hope your information will help advance nursing education teaching strategies in order to help prepare nursing students to be better equipped in leaderships skills to enter the nursing profession when they graduate. You also have the option to receive written and verbal feedback from the Mayer, Salovey, Caruso Emotional Intelligence Test. This one-to-one feedback is voluntary and requires a meeting for approximately one hour with Traci Sims, the principle investigator. Aggregate data will be provided to the hospital but no identifying information will be supplied.

### **Confidentiality**

We will keep your records private to the extent allowed by law. Traci Sims at Kennesaw State will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (KSU Institutional Review Board

and the Office for Human Research Protection (OHRP). We will use a code rather than your name on study records. The information you provide will be stored in a locked cabinet for three years. No facts that might point to you will appear when we present this study or publish its results. The findings will be summarized and reported in-group form. You will not be identified personally.

If you choose to receive your personal emotional intelligent scores in written and one-to-one feedback with Traci T. Sims, she will use the phone number that you choose to put on the Participant Form to contact you to arrange the meeting. Traci T. Sims will be the only person with the form that has your identification number and phone number. These forms will be locked and stored in a cabinet for three years.

### **Inclusion Criteria for Participation**

Participants in the study must be 18+ years of age and employed as either a staff nurse, nurse manager, or a nurse in nursing administration at Ridgeview Institute.

### **Statement of Understanding**

The purpose of this research has been explained and my participation is voluntary. I have the right to stop participation at any time without penalty. I understand that the research has minimal emotional risks due to self-discovery (if I choose to have the personal feedback), and I will not be identified. I will check my decision to participate or not to participate on the Participant Form and place in the designated box by the door.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 1000 Chastain Road, #0112, Kennesaw, GA 30144-5591, (678) 797-2268.

## Appendix F

Table 1

*Demographic Variables*

<b>Age</b>	Range 25 – 62 years old Mean 45.25 N = 12
<b>Gender</b>	
Female	91.7% (11)
Male	8.3% (1)
<b>Race</b>	
White	83.3% (10)
Black or African American	16.7% (2)
<b>Position</b>	
Administrator	8.3% (1)
Nurse Manager	41.7% (5)
Staff Nurse	50.0% (6)
<b>Years worked as a nurse</b>	Range 1- 43 years
< 5	16.6% (2)
5 - 10	0% (0)
11 - 20	16.6% (2)
21 - 43	66.5% (8)
<b>Years worked at current facility</b>	Range 1 – 31 years
< 2	25% (3)
5 – 10	25% (3)
11 – 20	25% (3)
> 20	25% (3)

Appendix G

Table 2

*EI Scores*

	<b>Below Average</b> <b>&lt; 90</b>	<b>Average</b> <b>90-109</b>	<b>Above Average</b> <b>&gt;110</b>
<b>Total EI Score</b>	0% (0)	50% (6)	50% (6)
<b>Perceiving Emotions</b>	8.3 % (1)	66.3% (8)	25% (3)
<b>Using Emotions to Facilitate Reasoning</b>	0% (0)	58.3% (7)	41.7% (5)
<b>Understanding Emotions</b>	0% (0)	50% (6)	50% (6)
<b>Managing Emotions</b>	0% (0)	50% (6)	50% (6)

Table 3

*EI Total Scores*

<b>EI Total Score</b>	Mean 110.08 Std. Deviation 9.718 Range 95- 128 90 – 110 Competent 50% (6) >111 Skilled 50% (6)
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Appendix H

Table 4

*Scatter and Positive/Negative Score*

<p><b>Positive/Negative Score</b></p>	<p>Mean 98.92</p> <p>Std. Deviation 11.090</p> <p>Range 81- 123</p> <p>81-99 50.0% (6)</p> <p>100-108 41.7% (5)</p> <p>&gt;122 8.3% (1)</p>
<p><b>Scatter Score</b></p>	<p>Mean 98.75</p> <p>Std. Deviation 15.955</p> <p>Range 79-128</p> <p>79-102 50.0% (6)</p> <p>103-118 41.7% (5)</p> <p>&gt;127 8.3% (1)</p>



Appendix I

Table 3

*Relationship between the sub-dimensions of the MSCEIT and the LBDQ (Consideration and Structure subsets)*

		Understanding Emotions	Blends
MSCEIT Total Score	Pearson Correlation	.099	.231
	Sig. (2-tailed)	.759	.470
Perceiving Emotions	Pearson Correlation	-.617*	-.422
	Sig. (2-tailed)	.033	.172
Using Emotions	Pearson Correlation	-.115	.247
	Sig. (2-tailed)	.722	.439
Managing Emotions	Pearson Correlation	.377	.107
	Sig. (2-tailed)	.227	.740
Emotion Management	Pearson Correlation	.351	.060
	Sig. (2-tailed)	.264	.853
Emotional Relations	Pearson Correlation	.104	-.073
	Sig. (2-tailed)	.747	.821
Consideration	Pearson Correlation	-.071	-.235
	Sig. (2-tailed)	.827	.463
Structure	Pearson Correlation	-.601*	-.717*
	Sig. (2-tailed)	.039	.009

\* Correlation is significant at the 0.05 level (2-tailed)

## Appendix J

Table 4

*Reliability*

Scale	Internal Consistency: Cronbach Alpha
MSCEIT	.738 for 15 items
LBDQ	.807 for 40 items

Scale	Split-half
LBDQ - Consideration	.662 Spearman-Brown Coefficient
LBDQ – Initiating Structure	.420 Spearman-Brown Coefficient

## Appendix K

## Participation Form

Participation Information for the Research Study: Testing the Reliability and Validity of Tools based on the Salovey-Mayer-Caruso Four-Branch Ability Model of Emotional Intelligence with Psychiatric-Mental Health Nurses

You are choosing to participate in a research study to determine if there is a relationship between self-rated and performance measures of emotional intelligence of psychiatric mental health nurses. Participation in this study is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. We will keep your records private to the extent allowed by law.

To complete the demographic information, Self-Rated Emotional Intelligence Test and the Mayer-Salovey-Caruso Emotional Intelligence test, first type in the address of the online survey below and use **your unique ID number** to log-in (see Consent Form):

1. Click on: <https://www.surveymonkey.com/s/DISSEI1>
2. When you click “done”, the Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT) will automatically come up. Put in the Access Code:  
17585-001-DIS and password: DISSERTATION

A page will come up asking for demographic information: **Put in your unique eight numbers’ code in both the “first name” and “last name” sections on this page. This other information is optional, but you must put the number in both name places for the test to open. DO**

**NOT PUT NAMES in this section.**

3. You can take at a later time at this address following the same directions as above: <http://www.mhsassessments.com>

## Appendix L

**CONSENT COVER LETTER**

**Title of Research Study:** Testing the Reliability and Validity of Tools based on the Salovey-Mayer-Caruso Four-Branch Ability Model of Emotional Intelligence with Psychiatric Mental Health Nurses

**Researcher's Contact Information:** Traci T. Sims at \_\_\_\_\_;

[tsims720@comcast.net](mailto:tsims720@comcast.net)

**Introduction**

You are being invited to take part in a research study conducted by Traci T. Sims of Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

**Description of Project**

The purpose of the study is a descriptive correlational study with four questions:

1. Are the emotional intelligence total scores in psychiatric-mental health Nurses (PMHN) on the MSCEIT significantly different from the sample of 5000 respondents on which the MSCEIT was normed?
2. Does the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) demonstrate internal consistency reliability to measure emotional intelligence in psychiatric-mental health nurses (PMHN)?
3. Does the Self-Rated Emotional Intelligence Scale (SREIS) demonstrate internal consistency reliability in psychiatric-mental health nurses (PMHN)?
4. Is there a correlation (convergent validity) between the Mayor-Salovey-

Caruso Emotional Intelligence Test (MSCEIT) total and branch scores and the Self-Rated Emotional Intelligence Scale (SREIS) total and branch scores?

**Explanation of Procedures:**

If you give consent, you will identify confidential numbers and access two internet addresses to take the emotional intelligence tests. To identify your unique confidential number, follow the following directions:

You will need an eight-digit unique identification number to log-on for both of the emotional intelligence tests. Please use your first two digits of your date of birth (for example: January would be 01, February would be 02....December would be 12), plus the date of your birthday (for example: 1 would be 01, 10<sup>th</sup> would be 10.... 31<sup>st</sup> would be 31) and then the four digits of your year of birth: for example: 1959. If you were born on January 5, 1960, your eight-digit unique code would be: 01051960

The first internet address is a Survey Monkey with the Self-Rated Emotional Intelligence Test (SREIS) and will have eight demographic questions (age, gender, race, education level, type of nursing license, country of residence, years worked as a psychiatric nurse, and years worked at the present mental health facility or retired or not currently employed in a psychiatric setting) and 19 items using a likert scale (very inaccurate, moderately inaccurate, neither nor, moderately accurate, or very accurate), which takes about 10 minutes to take. The data will be collected in an anonymous manner and IP addresses will not be collected. When you finish this questionnaire and click “done”, the second internet address will automatically appear which is the Mayer,

Salovey, Caruso Emotional Intelligence Test (MSCEIT). **Put in your unique eight numbers confidential number in both the “first name” and “last name” sections.**

You can wait if you prefer and log on to the Multi-Health Services (MHS) website at a later time using the website address on your Participation Form. The MSCEIT is an ability-based measure of emotional intelligence. It has 141 items and should take approximately 30–45 minutes to take. The MHS does collect IP addresses, but it holds any and all information collected in the strictest of confidence and limits the use of any such data to purposes outlined and ensures both security and privacy. All data from both websites will be anonymous.

### **Time Required**

The time to complete the two online tests will be approximately one hour.

### **Risks or Discomforts**

In this study, you may have minimal emotional risk due to self-discovery.

### **Benefits**

We hope your information will help advance nursing education by identifying reliable emotional intelligence tools. Aggregate data will be provided upon request.

### **Confidentiality**

We will keep your records private to the extent allowed by law. Traci Sims at Kennesaw State will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (my dissertation committee, KSU Institutional Review Board and the Office for Human Research Protection (OHRP)). We will use your unique eight number code rather than your name on study records. The information you provide will be stored in a locked cabinet for three years. No facts that might point to you will appear when we present this study or publish its results. The findings will be summarized and reported in-group form. You will not be identified personally.

### **Inclusion Criteria for Participation**

Participants in the study must be 18+ years of age, have worked as a psychiatric-mental health nurse, and have English as their principal language.

**Statement of Understanding**

The purpose of this research has been explained and my participation is voluntary. I have the right to stop participation at any time without penalty. I understand that the research has minimal emotional risks, and I will not be identified.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 1000 Chastain Road, #0112, Kennesaw, GA 30144-5591, (678)



## Appendix M

Announcements posted on APRN, ISPN and MAAPPNG sites

**EMOTIONAL INTELLIGENCE DISSERTATION STUDY:****Testing the Reliability and Validity of Tools based on the Salovey-Mayer-Caruso  
Four-Branch Ability Model of Emotional Intelligence with Psychiatric Mental  
Health Nurses**

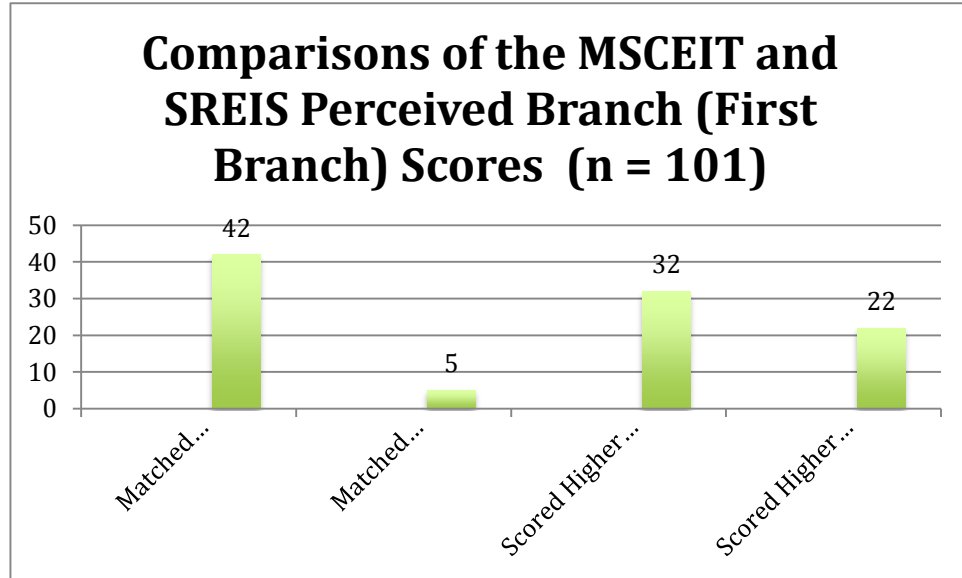
Today in an ever-changing healthcare and nursing shortage environment, nurses need skills to maintain their own health as well as assist patients in maintaining their health. Mayor, Salovey, and Caruso's Four-Branch Ability Model of Emotional Intelligence (1997) builds on the importance of self-awareness, advocating for the additional skills of perceiving, using, understanding, and managing emotions in order to have effective therapeutic relationships. Having a reliable and valid emotional intelligence tool could guide psychiatric-mental health nurses to understand their own emotional intelligence as well as to develop more effective ways to improve their therapeutic relationships with patients. As a psychiatric nurse, you are being invited to take part in a research study conducted by Traci T. Sims, a doctor of nursing science student at Kennesaw State University on emotional intelligence. Before you decide to participate in this study, you should read the attached consent form and participation form and ask questions about anything you do not understand. If you know of other psychiatric mental health nurses who may interested to participate, you may forward this e-mail to them.

Thank you for your participation.

Appendix N

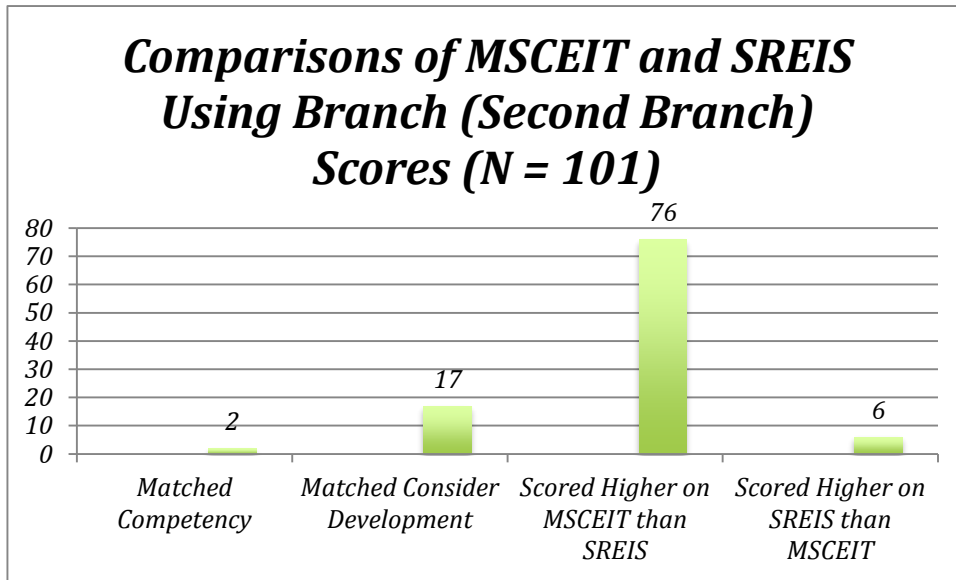
*Tables Comparing the Branches of the MSCEIT and SREIS Legends*

*Bar Graph of the PMHN’s MSCEIT and SREIS Branch One (Perceiving) Scores*



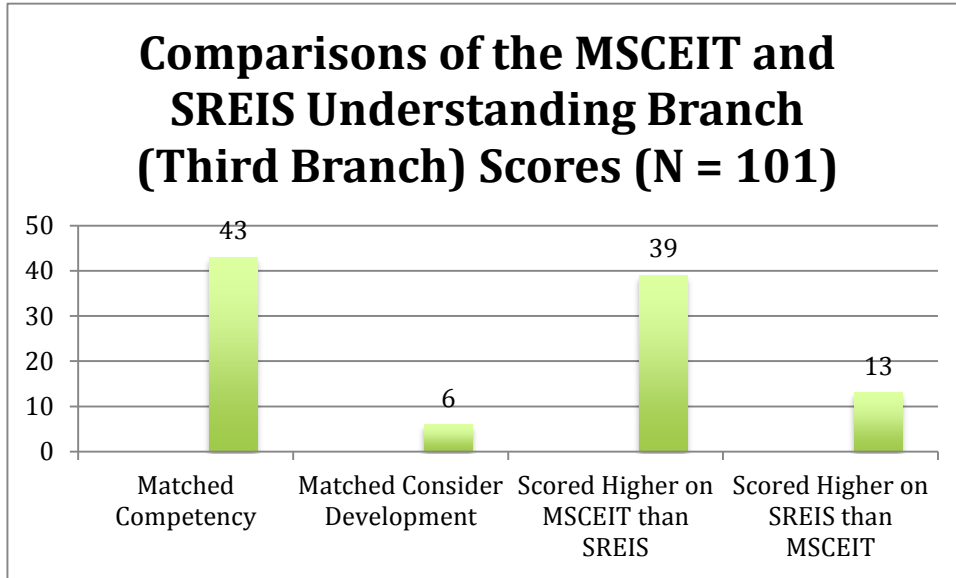
When the MSCEIT branch one perceived scores are compared to the SREIS perceived branch scores (branch one), 47 (46.5%,  $N = 101$ ) of the PMHN scores on the MSCEIT matched the SREIS scores. PMHNs scoring 4 (moderately accurate) or 5 (very accurate) on the SREIS matched “competent” (90 to 109) and “skilled” (110 – 129) on the MSCEIT (42 PMHNs, 41.6%). Five of the PMHNs scored 3 (neither nor) on the SREIS, which matched the MSCEIT scores of “consider developing” between 70 and 89. This finding suggests that 46.5% of the PMHN scores were similar between the MSCEIT and SREIS for “competency”, “skilled” and “consider development”. The finding that 32 (31.7%) PMHN scored higher on the MSCEIT than the SREIS suggests that PMHN performed better on a skills test than what they believed their ability was. Twenty-two (21.8%) PMHN perceived their skills to be higher than the MSCEIT test showed.

*Bar Graph of the PMHN’s MSCEIT and SREIS Branch Two (Using) Scores*



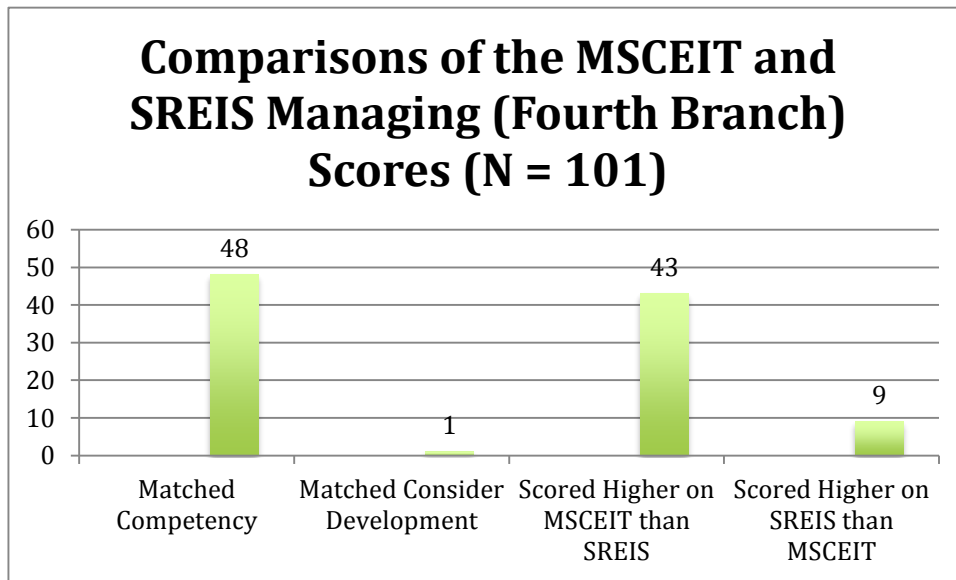
When the MSCEIT total scores are compared to the SREIS using branch scores (second branch), 19 (18.8%,  $N = 101$ ) of the PMHN scores on the MSCEIT matched the SREIS scores. PMHNs scoring 4 (moderately accurate) on the SREIS matched “competent” (90 to 109) on the MSCEIT (2 PMHNs, 2%). Seventeen of the PMHNs scored 3 (neither nor) on the SREIS, which matched the MSCEIT scores of “consider developing” between 70 and 89. This finding suggests that 18.8% of the PMHN scores were similar between the MSCEIT and SREIS for “competency” and “consider development”. The finding that 76 (75.2%) PMHN scored higher on the MSCEIT than the SREIS suggests that PMHN performed better on a skills test than what they believed their ability was. Six (5.9%) PMHN perceived their skills to be higher than the MSCEIT test showed.

*Bar Graph of the PMHN’s MSCEIT and SREIS Branch Three (Understanding) Scores*



When the MSCEIT branch three (understanding) scores are compared to the SREIS understanding branch scores (branch three), 49 (48.5%,  $N = 101$ ) of the PMHN scores on the MSCEIT matched the SREIS scores. PMHNs scoring 4 (moderately accurate) or 5 (very accurate) on the SREIS matched “competent” (90 to 109) and “skilled” (110 – 129) on the MSCEIT (42.6% PMHNs). Six of the PMHNs scored 3 (neither nor) on the SREIS, which matched the MSCEIT scores of “consider developing” between 70 and 89. This finding suggests that 48.5% of the PMHN scores were similar between the MSCEIT and SREIS for “competency”, “skilled” and “consider development”. The finding that 39 (38.6%) PMHN scored higher on the MSCEIT than the SREIS suggests that PMHN performed better on a skills test than what they believed their ability was. Thirteen (12.9%) PMHN perceived their skills to be higher than the MSCEIT test showed.

*Bar Graph of the PMHN's MSCEIT and SREIS Branch Four (Managing) Scores*



When the MSCEIT branch four (managing) scores are compared to the SREIS managing branch scores (branch four), 49 (48.5%,  $N = 101$ ) of the PMHN scores on the MSCEIT matched the SREIS scores. PMHNs scoring 4 (moderately accurate) on the SREIS matched “competent” (90 to 109) on the MSCEIT (47.5% PMHNs). One of the PMHNs scored 3 (neither nor) on the SREIS, which matched the MSCEIT scores of “consider developing” between 70 and 89. This finding suggests that 48.5% of the PMHN scores were similar between the MSCEIT and SREIS for “competency”, “skilled” and “consider development”. The finding that 43 (42.6%) PMHN scored higher on the MSCEIT than the SREIS suggests that PMHN performed better on a skills test than what they believed their ability was. Nine (8.9%) PMHN perceived their skills to be higher than the MSCEIT test showed.