The Relationship Between Emotional Intelligence and Clinical Performance in an
Occupational Therapy Training Program

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Approval

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Abstract

Emotional intelligence has emerged as an important factor in identifying the

potential abilities of graduates in the health professions to achieve success.

Occupational therapy training programs have yet to investigate the relationship

between students' emotional intelligence and clinical performance. The current

quantitative study investigated whether emotional intelligence affects fieldwork

performance in an occupational therapy training program. Forty-five graduate

students and their clinical supervisors participated. Emotional intelligence was

assessed from both the supervisors' perspective of the student and students'

ratings of themselves. A positive relationship was hypothesized between

emotional intelligence (as measured by the Emotional Competence Inventory-

ECI) and fieldwork performance (as measured by the American Occupational

Therapy Association's Fieldwork Performance Evaluation). No significant

relationship was found between student self-ratings of emotional intelligence and

clinical performance. Nor was there a relationship between student self-ratings of

emotional intelligence and supervisor scores of student emotional intelligence.

However, a positive relationship was found between supervisors' ratings of

student's emotional intelligence and fieldwork performance. Two-tailed paired t-

tests found that students' self-ratings of emotional intelligence were generally

higher than their fieldwork supervisors' (t=-3.64, p=.001). Suggestions for future

research include the use of multiple raters to evaluate students' emotional

competencies, clarifying the relevance of emotional intelligence for a larger

cohort, and a developing a greater knowledge of risk factors that can contribute to

poor fieldwork performance. Further research could be conducted to implement

strategies that enhance communication between supervisors and students to create

better synchrony in assessing and integrating emotional intelligence in fieldwork.

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Chapter 1: Introduction

Background

Emotional intelligence (EI) has attracted growing interest in relation to various educational, health, and occupational outcomes (Boyatzis & Saatcioglu, 2008; Landy, 2005; Van Roo & Viswesvaran, 2004; Sala, 2002). Salovey and Mayer first proposed their theory of emotional intelligence in 1990. Over the subsequent decade, their theory became a major topic of interest in social science circles as well as in the lay public. Emotional intelligence has been described as a form of social intelligence that involves the ability to identify and monitor one's own emotions and behaviors as well as those of others (Salovey & Mayer, 1990). The main emphasis of research in the field of emotional intelligence is to understand how individuals perceive, discriminate, and manage emotions in an attempt to predict and promote personal effectiveness (Cherniss, 2002).

Evolving research will broaden the spectrum of psychological theories that explain how individuals flourish in their lives, jobs, families, and as citizens in their communities (Goleman, 2000; Mayer, Caruso & Salovey, 1999; Salovey & Grewel, 2005). Emotional intelligence abilities may have an overall positive impact on work environments in most fields, and it is suggested that these core competencies are perhaps of particular importance in the health care environment (Freshman & Rubino, 2002; Jaeger, 2003).

Statement of the Research Problem

Emotional intelligence may play a significant role in how future health practitioners interact with patients and clients. At this time occupational therapy training programs have not addressed the relationship between clinical performance in fieldwork and whether emotional intelligence plays a significant role in the success or failure in this component of the curriculum. Fieldwork education, the time when didactic academic course work joins and clarifies theory with practice in the context of the clinical setting, is an integral part of the occupational therapy curriculum and necessary for the development of competent and professional practitioners (Bonello, 2001). Studies exploring correlations between academic grades and clinical performance in occupational therapy programs suggest that academic grades alone are not effective indicators of fieldwork success (Best, 1994; Booth, 1957; Englehart, 1957; Ford; 1979; Katz & Mosey, 1980; Lind, 1970; Mann & Banasiak, 1985). A clearer understanding of the relationship between a student's emotional intelligence and his or her capacity for success in fieldwork experience, the clinical component of the occupational therapy curriculum, is essential. The role of emotional intelligence in clinical performance is of utmost interest to occupational therapy educators because emotional intelligence may play a significant role in how future health practitioners interact with patients and clients (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993).

With greater demands placed on emerging practitioners to fulfill multiple roles in clinical practice (examples include: therapist, administrator, advocate, consultant and entrepreneur), a clearer understanding of whether there is a relationship between emotional intelligence and clinical experience may indicate areas for enhancing

performance in clinical experiences and future job performance (Gutman, McCreedy, & Heisler, 1998; Schutte, et al., 2001). If this relationship exists, it holds promise for integrating appropriate emotional intelligence training in the academic realm of occupational therapy programs to better equip students to meet the challenges and changes in health care (Freshman & Rubino, 2002).

Purpose Statement

Emotional intelligence may play a significant role in student success or failure in the clinical component of the occupational therapy curriculum. The present quantitative study was designed to investigate the relationship between emotional intelligence and student clinical performance in an occupational therapy graduate program. 45 graduate students enrolled in the occupational therapy program at the New York Institute of Technology in Westbury, New York at the time of this study and their supervisors participated in this research**.**

Theoretical Framework

Emotional intelligence has emerged as an important factor in identifying the potential abilities of graduates in the health professions to achieve success (Boyatzis & Saatcioglu, 2008; Carrothers, Gregory, & Gallagher, 2000). The literature suggests evidence that emotional intelligence concepts should be developed further and included in medical and health science training programs, specifically in the profession of occupational therapy (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993).

In the United States, all accredited occupational therapy training programs require a six month clinical fieldwork education as part of the curriculum. The clinical fieldwork

experience took place following the completion of the two-year didactic portion of the academic program. The researcher invited students and clinical supervisors to serve as participants in the study. The researcher explained the value of the study as having potential to determine elements needed to ensure success in the clinical setting and ways that the curriculum may be improved in the future.

The researcher explained the two measurements used in the study (The Emotional Competence Inventory and the American Occupational Therapy Fieldwork Performance Evaluation) as well as the purpose of the consent form. Participants were assured that if they did not wish to participate in the study, or if they wanted to withdrawal at any time, there would be no negative consequences.

Research Questions and Hypotheses

The primary goal of the present study was to explore the relationships between student emotional intelligence and clinical performance in an occupational therapy program. The first research question asked whether there was a relationship between student self-assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI), and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. It was hypothesized that a significant relationship exists between student self-assessment of emotional intelligence as measured by the ECI, and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. The null hypothesis for the first research question was that there would be no significant relationship between student self-assessment of emotional intelligence and fieldwork performance.

The second research question asked whether a relationship exists between supervisors' assessment of student emotional intelligence as measured by the ECI and fieldwork performance as measured by the score of the American Occupational Therapy Association's Fieldwork Performance Evaluation. It was hypothesized that a significant relationship between the supervisor's assessment of student emotional intelligence as measured by the ECI, and the predictor of fieldwork performance, as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. The null hypothesis for the second research question was that there would be no significant relationship between the supervisor's assessment of student emotional intelligence and fieldwork performance.

The third research question asked whether there was a relationship between student self-perception of emotional intelligence and the fieldwork supervisor perception of student emotional intelligence as measured by the ECI. It was hypothesized that there was a significant relationship between student self-perception of emotional intelligence and the fieldwork supervisor perception of student emotional intelligence as measured by the ECI. The null hypothesis for the third research question was that there would be no significant relationship between student self-perception of emotional intelligence and supervisor assessment of student emotional intelligence.

Brief Review of Related Literature

There is a growing body of emotional intelligence research in the field of corporate management and more recently in the context of medical and nursing education (Abraham, 2004; Akerjoret & Severinson, 2007; Rao, 2006). Current research in the area of emotional intelligence suggests a promising understanding of the mechanisms that

integrate personality, IQ, and academic achievement. More specifically, emotional intelligence has emerged as an important factor in identifying the potential abilities of graduates in the health professions to achieve success (Boyatzis & Saatcioglu, 2008; Carrothers, Gregory, & Gallagher, 2000; McCallin & Bamford, 2007; Stratton, Elam, Murphy-Spencer & Quinlivan, 2005; Wagner, Ginger, Grant, Gore, & Owens, 2002).

Personal growth and emotional intelligence are essential for professional competence and quality in one's role as a health practitioner or occupational therapist providing patient-centered care. It would follow that a harmonious integration of logic and emotional intelligence would be an important requisite for practitioners in the health related professions (Akerjordet & Severinsson, 2007; Birks & Watt, 2007).

Significance of Research

Traditionally, research focused on student intelligence quotients and grade point averages to predict academic and vocational success (Wechsler, 1958), but in the 1990's, predictors of success shifted toward emotional intelligence. More recent research suggests that IQ alone does not predict competencies that integrate cognitive, emotional and social abilities (Brackett, Mayer, & Warner, 2003; Goleman, 1998, 2000; Mayer et al., 1999; Salovey & Grewel, 2005).

Despite the aforementioned link between health care and emotional intelligence, traditional medical and health science education have not placed a strong emphasis on interpersonal and communication skills Understanding the role of emotional intelligence in clinical performance is of utmost interest to occupational therapy educators because emotional intelligence may play a significant role in how future health practitioners

interact with patients and clients (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993).

Definition of Key Terms

Emotional Competence: A learned capacity based on emotional intelligence that contributes to effective performance in a variety of life roles. Emotional competence is determined by the results of the Emotional Competence Inventory (ECI-2.0). The term *emotional competence* is currently used for the most part by psychologists and researchers who have developed and use the ECI.

Emotional Competence Inventory: A 360-degree informant report instrument designed to assess the emotional and social competencies of individuals.

Emotional Intelligence: A set of abilities that enable a person to recognize, monitor, perceive, and express their own feelings and those of other's in order to guide thinking and action. The term *emotional intelligence* was the term originally used by psychologists that the general public could understand. The terms *emotional intelligence* and *emotional competence* are used accordingly throughout this study as they relate to the work of specific theorists and their research. Emotional intelligence will be assessed by the scores of the Emotional Competency Inventory (ECI-2.0).

Fieldwork Performance: Score on the American Occupational Therapy Association's Fieldwork Performance Evaluation. A minimal passing score is 122.

Summary

The degree to which students possess or lack emotional intelligence may influence their fieldwork performance. A clearer understanding of the role of emotional intelligence in clinical performance will enable occupational therapy educators to

evaluate and better design programs and course curriculum to effectively prepare students to meet their academic and professional requirements (Freshman & Rubino, 2002; Gutman et al., 1998; Schutte et al., 1998). This study may suggest additional applications of emotional intelligence concepts and further evidence that emotional intelligence should be developed and included in medical and health science training programs, specifically in the profession of occupational therapy.

Chapter 2: Literature Review

This first section of the literature review will focus on the background and history of the theories that have generated the most interest in terms of research and applicability of emotional intelligence. The second section of the literature review will illustrate studies related to emotional intelligence, work performance in corporate and health related professions, specifically the field of occupational therapy.

Background and History of Emotional Intelligence Theories

When psychologists first began to identify and explore the concept of emotional intelligence, they focused solely on the cognitive aspects, such as memory and problem-solving abilities. Researchers recognized early on that non-cognitive characteristics were also relevant. In the 1940's Wechsler referred to "non-intellective" as well as "intellective" elements. These "non-intellective" elements included: affective, personal, and social factors. Wechsler regarded these "non-intellective" traits as essential for predicting one's ability to succeed in life and were related to one's attitudes and behaviors (Wechsler, 1958). The notion is that intelligence encompasses multiple components and no single measure of intelligence is truly all-encompassing.

Cognitive and emotional development was recognized even in the 1940's and 1950's, with emotional intelligence identified as an important aspect of the learning process. The construct of emotional intelligence bridges the concepts of emotion and intelligence by viewing emotions as a useful source of information to be used in the interpretation and navigation of one's social environment. Because emotions are an integral part of learning, as they drive one's attention to new information and skills, an assessment of intelligence that emphasizes one aspect of development to the exclusion of

another aspect of development may lead to inaccurate conclusions (Planalp & Fitness, 1999).

In another example of the early exploratory writings about social intelligence, Thorndike identified non-cognitive aspects of intelligence that were discrete from academic abilities and essential for adaptation and success in the practicalities of life (Thorndike & Stein, 1937). The works of Wechsler and Thorndike later influenced Gardner who revived these earlier studies of multiple intelligences. Gardner's perspective was compatible with his predecessors who maintained that "interpersonal and intrapersonal" intelligences were equally as significant and necessary as traditional IQ. Gardner further refined these earlier definitions of multiple intelligences by describing interpersonal intelligence as those skills concerned with the ability to understand and work well with others. He described intrapersonal intelligence as the ability to be self-aware, to recognize one's own feelings and to relate adequately to them in social situations (Gardner, 1999). These emerging theories recognized that traditional measures of intelligence did not include the significance of individual differences in abilities to perceive, process, and manage emotions in order to utilize cognitive information.

John McClelland, Harvard professor and psychologist, is another important figure in the field of social psychology that influenced the early roots of emotional intelligence theory. McClelland was one of the first theorists to identify specific social competency skills. His theory of achievement describes the relationship between a person's unconscious motives and self-schema as they are observed in behavioral patterns, or competencies, that distinguish outstanding performers. His work, as well as that of the previously mentioned theorists, provides groundwork for the conceptualization and

description of emotional intelligence as an actual form of intelligence that functions as interplay between emotions and intelligence. The research discussed thus far offers positive implications and a foundation for defining emotional intelligence in terms of practical and discrete skills that can be learned and developed to enhance overall performance. Framing emotional intelligence as a group of abilities enables emotional intelligence to qualify as an actual intelligence within the larger body of research on intelligence (Boyatzis, 2008; Jaeger, 2003; McClelland, 1973).

The next stage of research into emotional intelligence can be delineated into the work of three major theorists: Bar-On, Mayer and Salovey, and Goleman and Boyatzis. They each share a common desire to understand and measure the abilities and traits related to identifying and utilizing emotions in ourselves and others. Theirs are the three main models and measurements of emotional intelligence that currently exist and have sound psychometrics and well established studies (Bar-On, 2006; Boyatzis, 2008; Goleman, 2000; Mayer, Caruso & Salovey, 1999).

Bar-On initiated his model and measurement from a personality perspective. His measurement assesses internally driven aspects of emotions to determine how a person handles their emotions (Bar-On, 1997, 2006). The second group of theorists, Mayer and Salovey, focus their theory and measurement on how a person directly handles one's emotional response to various emotional arousals, but does not provide a clear link to how they would act (Salovey & Grewel, 2005). The third group of theorists, Goleman and Boyatzis, created a theory and instrument that assesses a person's emotional intelligence competencies. Their goal was to see how individuals handle emotions and how this manifests as behavioral patterns (Boyatzis, 2008; Goleman, 1998, 2000).

The first of the major theories of emotional intelligence to emerge was that of Bar-On. The timing of Bar-On's research was consistent with increasing interest in the role of emotions in social functioning. Bar-On, a clinical psychologist, highlighted positive qualities and outcomes such as "happiness" and "self-actualization" and is based on determinates of psychological well-being. To denote the concept of emotional intelligence as a unique construct, Bar-On characterizes his personality model as a synthesis of abilities and skills that represent a collection of knowledge used to cope with life (Bar-On, 1997, 2004, 2006).

Bar-On developed his measurement, the EQ-i, as a self-report measure of emotionally and socially competent behavior during more than 17 years of research in clinical settings. The instrument was derived from a model of personality and designed to consider how a person handles emotions. The EQ-i was the first measure of emotional intelligence to reveal results about emotionally and socially intelligent behavior underlying the construct of emotional intelligence (Bar-On, 1997, 2004, 2006).

The EQ-i contains 133 items in the form of short sentences organized into five broad domains and designed to assess specific skills and traits correlated with well-being. The responses render a total EQ-i score as well as scores comprised of 15 subscales. The first domain of the EQ-i is the *intrapersonal* domain. This domain assesses the inner self an individual's ability to interpret one's own feelings, adequately express them, and feel positive about what they are doing in their lives (Bar-On, 1997, 2004, 2006).

The second domain, the *interpersonal* domain, assesses interpersonal skills and functioning, including the ability to interact with, understand, and relate well to others and their emotions. The *stress management* domain, the third domain, includes the

ability to control impulses. The fourth domain is the *adaptability* domain, which includes the ability to problem solve. The fifth and final domain, *general mood*, is described by Bar-On as a facilitator of emotional intelligence and includes optimism and happiness (Bar-On, 1997, 2004, 2006).

Correlation studies between the EQ-i and other subscales of personality have been moderate to high, particularly with those that utilize closely related constructs. The EQ-i possesses substantial construct validity with findings indicating a 36% correlation between the EQ-i and other measures of social emotional intelligence. When compared with a 4% correlation with IQ tests and a 15% correlation with personality tests, it is obvious that the EQ-i is measuring key aspects of similar scales of emotional and social intelligence rather than test that measure psychological constructs of cognitive intelligence or personality traits (Bar-On, 1997, 2006).

Findings revealed that the Bar-On conceptual and assessment model is stable and reliable (Bar-On, 2004). The overall internal consistency coefficient of the EQ-i is .97. The overall test re-test reliability examination of the EQ-i is .72 for males and .80 for females. This scale demonstrates internal consistency within the factorial components of this model over time. The EQ-i is perhaps the most widely used measure of emotional intelligence and provides a valid and reliable estimate of an individual's ability to successfully cope with the challenges of everyday life, as conceptualized by Bar-On. The EQ-i has gained extensive international recognition and has been translated into more than 15 languages and used in numerous settings world-wide (Bar-On, 2004, 2006).

The second major group of researchers to develop the concept of emotional intelligence was Salovey and Mayer. They formally coined the phrase emotional

intelligence in 1990 (Salovey & Mayer, 1990). While aware of Bar-On's model and other research on the non-cognitive aspects of intelligence, they were the first to propose a systematic theoretical account of the emotional intelligence construct. The Mayer-Salovey model is an intelligence-based and ability oriented approach that describes emotional intelligence as a set of non-cognitive abilities possessed by an individual to monitor his or her own emotions as well as those of others, discriminate between the positive and negative effects of emotions, and use emotional information to guide actions. They have advanced and refined their theory through rigorous scientific research (Codier, Kooker, Shoultz, 2008; Mayer et al., 1999; Schutte, et al., 2001).

According to Mayer and Salovey's framework, emotional attributes are categorized into four hierarchical abilities: (1) the accurate perception, appraisal, and expression of emotions; (2) generating feelings on demand when they can facilitate understanding of yourself or another person; (3) understanding emotions and the knowledge that can be derived from them; and (4) the regulation of emotion to promote emotional and intellectual growth. In order to measure these abilities, operationalize their model, and define their constructs, Mayer and Salovey created a self-report measure, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer et al., 1999, Mayer, Salovey & Caruso, 2002; Salovey & Grewel, 2005; Salovey & Mayer, 1990).

The MSCEIT was created in 1997 with the intention of assessing the subject's ability to perceive, identify, understand, and work with emotions. The Format includes images of faces and designs that depict a variety of emotions. Items are designed to measure four major components that underlie the construct of emotional intelligence as

well as generate a total score (Brackett, Mayer, & Warner, 2003; Mayer et al., 1999,

2002; Salovey & Grewel, 2005; Salovey & Mayer, 1990).

The first component of the MSCEIT, *perceiving emotions*, assesses an

individual's perception and appraisal of emotions. This is interpreted as the ability to

identify and decipher one's own emotions and thoughts through the use of stories, voices,

and facial expressions. The subject rates how much of a particular emotion is being

expressed in either a picture of a face expressing a basic emotion or in a picture of a

design or landscape. This first component is the most basic aspect of emotional

intelligence and makes the processing of emotional information possible (Mayer et al.,

2002; Salovey & Grewel, 2005).

The second component of the MSCEIT, *using emotions*, consists of tasks that

detect a person's ability to assimilate and use one's emotions to facilitate cognitive

activities such as problem solving and thought processes. For example, how mood might

affect performance on a test. This component measures an individual's ability to describe

emotional experiences, determine their reasonability, and use them to prioritize thinking

in productive ways. This component is measured by asking subjects to describe

emotional situations and their parallels to other sensory modalities and by assimilating a

predetermined mood into their thought processes concerning a case scenario (Brackett et

al., 2003; Mayer et al., 2002; Salovey & Grewel, 2005).

The third component of the MSCEIT, *understanding emotions*, is an individual's

ability to comprehend the various ways that emotions are expressed and how emotions

evolve over time. This portion of the measurement requires the subject to label emotions

and other concurrent feelings and understand the relationships associated with these simultaneous emotional experiences (Brackett et al., 2003; Mayer et al., 2002).

Finally, the fourth component, *managing emotions*, assesses how well subjects are able to manage their own emotions and the emotions of others. This component examines the ability to discriminate between emotions that are useful or useless in hypothetical situations and to connect or disconnect with the emotion accordingly. Subjects select responses that indicate either more or less effective means of managing emotions in interpersonal situations (Brackett et al., 2003; Mayer et al., 2002).

The MSCEIT has content validity and possesses a factor structure congruent with the theorist's four-part model of emotional intelligence and a full-scale reliability of r=0.91(Brackett et al., 2003; Mayer et al., 1999, 2002; Salovey & Grewel, 2005; Salovey & Mayer, 1990). While there is a moderate correlation between the MSCEIT and traditional measures of intelligence, the Bar-On EQ-i shows a greater degree of overlap with traditional measures of personality). Studies using the MSCEIT and EQ-i do not suggest significant correlations with one another (Schutte, et al., 1998; Van Roo & Viswesvaran, 2004).

The MSCEIT has become a popular assessment tool used to assess individual abilities to perceive, identify, understand, and work with emotions. The MSCEIT provides evidence that emotional intelligence is a true intelligence, uniquely distinct from traditional cognitive measures of intelligence.

The work of Goleman and Boyatzis are the most recent addition to the three theories. Both leading researchers and psychologists in the field of emotional intelligence and former graduate students of McClelland at Harvard developed a theory

of emotional intelligence. Goleman (1998) globally popularized the concept of EI which

reflects how an individual's potential for mastering certain competencies leads to either

success or failure in work and life's roles in general (Boyatzis, 2008; Goleman, 1998,

2000). According to Goleman and Boyatzis, emotions influence our cognitive process

and provide the intentions that underlie behaviors. Individuals who are able to connect

thoughts to emotions may be better able to recognize the meanings of emotions and to

problem solve in situations based on these abilities, particularly in work settings

(Boyatzis, 2008; Boyatzis, Leonard, Rhee & Wheeler, 1996; Goleman, 2000; Rao, 2006).

Goleman and Boyatzis detailed the integrated relationship between unconscious

motives, values, skills, traits, and behaviors. They synthesized the psychological level

with hormonal, neurological, and physiological aspects of the individual. This integrated

approach was spawned by and incorporates previous competency research by McClelland

into a more holistic understanding of emotional and social intelligence. The biological

source for emotional intelligence lies largely in the neurotransmitters of the brain's limbic

system, which governs feelings, impulses, and drives. The limbic system responds best

through motivation, extended practice, and feedback. This is in contrast to the kind of

learning that takes place in the neocortex which governs analytical and technical abilities

(Boyatzis, 2008; Boyatzis et al., 1996; Goleman, 2000).

In an effort to better understand the complex process involved in performance,

Goleman and Boyatzis developed the Emotional Competence Inventory (ECI)

(HayGroup, 2006). This inventory measures a person's capability in handling their and

others emotions at work, home or with friends. The ECI is an informant report

instrument, otherwise termed a multi-source feedback assessment, or *360* for short. A 360

assessment asks people from different groups to obtain a consensus view of the patterns in a person's use of their emotional competencies. These views may come from supervisors, peers, clients, classmates, or friends (Boyatzis et al., 1996; Boyatzis, 2008; Goleman, 2000; Wolf, 2006).

The ECI includes 72 questions designed to measure 18 competencies, organized into four domains. The ECI is organized into the following four domains of competencies: (1) Self-awareness, (2) Self-management, (3) Social awareness, and (4) relationship management (Boyatzis, 2008; Wolf, 2006). Each of the 18 competencies is defined as a specific capability or ability linked to and based on emotional intelligence. Emotional competencies are organized around an underlying intent, which results in successful performance at work. Each domain becomes the foundation for the subsequent domain (Akerjordet, & Severinsson, 2007; Boyatzsis, 2008; Goleman, 2000).

Self-Awareness, the first domain of the ECI contains three competencies: (1) Emotional Self-Awareness-recognizing one's own emotions and their effects. This competency enables one to know which emotions they are feeling and why, realize the links between their feelings and what they think and do, and how their feelings affect their performance, and have a guiding awareness of their values and goals. The second competency of this domain is (2) Accurate Self-Assessment which allows one to know one's own strengths and weaknesses, use reflection, and learn from experiences. This competency allows one to receive candid feedback, new perspectives, continuous learning, and have perspective and a sense of humor about oneself. Self-awareness shows itself as candor and an ability to assess oneself realistically (3) Self-confidence is the third competency of this domain and reflects in sureness about one's self-worth and

capabilities allowing one to be decisive despite uncertainties (Boyatzis, 2008; Cherniss, 2002; Koman & Wolf, 2008; Leonard, 2007; Wolf, 2006).

Self-Management is the second domain and contains 6 competencies: (1) Emotional self-control, (2) Transparency, (3) Adaptability, (4) Achievement, (5) Initiative, and (6) Optimism. Self-management determines a person's ability to perceive, identify and manage emotions. Self-Management enables a person to use choice regarding expression of certain emotions rather than denying or repressing feelings. This domain provides the basis for the kinds of social and emotional competencies important for success at work (Cherniss, 2002).

The first competency of Self-management domain is Emotional Self-control. This competency allows one to keep disruptive emotions and impulses under control. Individuals who are adept at regulating their emotions find it easier to develop interrelated competencies within this domain, such as initiative or achievement (Goleman, 2000; Rao, 2006; Koman & Wolf, 2008).

The second competency, Transparency, refers to maintaining integrity and acting congruently with ones values. The third, Adaptability, is being flexible in handling change. Achievement is the fourth competency and includes striving to improve or meeting an internal standard of excellence. The fifth competency, Initiative, is readiness to act on opportunities. The sixth competency is Optimism which is persistence in pursuing goals despite obstacle and setbacks.

Social-Awareness is the third domain of the ECI and contains 3 competencies: (1) empathy, (2) organizational awareness and (3) service orientation. Empathy is sensing other's feelings and perspectives and taking interest in their concerns. Empathy is

particularly important today with the increasing use of teams and the need to retain talented employees. (4) Organizational awareness is reading a group's emotional currents. Service orientation is anticipating, recognizing, and meeting customer's needs.

The fourth domain is Relationship management with 6 competencies: (1) Developing others- sensing other's development needs and bolstering their skills and opportunities, (2)Inspirational Leadership refers to the ability to inspire and guide individuals and groups, (3) Change Catalyst-which initiates or manages change (4) Influence-adeptness at effective tactics for persuasion. (5) Conflict management is negotiating and resolving disagreements (6) Teamwork and Collaboration pertains to working with other toward shared collective goals.

The ECI competencies are highly intercorrelated, thus achieving good factorial validity is difficult. Reliability analysis with large samples using the ECI has shown very high internal consistency; however, evidence for test-retest reliability is limited (Brackett, Mayer & Warner, 2003). The overall average internal consistency coefficient of .75 indicates very good internal consistency reliability for the ECI (Brackett, Mayer & Warner, 2003; Wolf, 2005). The ECI demonstrates a very good degree of content and construct validity compared with various measures of similar constructs, while demonstrating less association with more cognitive assessments of abilities (Brackett & Mayer, 2003; Wolf, 2006).

With the development of the ECI, Goleman and Boyatzis took Mayer and Salovey's work a step further by assessing how abilities associated with emotional intelligence impact on performance in work and daily life roles. Both the ECI and MSCEIT assess how a person directly manages their emotions, while only the ECI is able

to make a clear link to generalize how that person might act in a similar or different situation (Goleman, 2000, Boyatzis et al., 1996; Boyatzis, 2008).

To summarize, emotional intelligence has been conceptualized as both a form of mental intelligence that involves the processing of emotional information and as a broader range of abilities, traits, skills and abilities. The three theorists and their approaches represent a distinctive shift from intelligence models that, in contrast, base determinants of intelligence and ability solely on cognitive skills. Distinguishing a comprehensive and holistic interpretation of intelligence definition is a complex process because definitions of emotional intelligence are characterized by a synthesis of both cognitive and emotional abilities (Bar-On, 2006; Boyatzis, 2008, Boyatzis, Leonard, Rhee & Wheeler, 1996; Mayer et al., 1999; Salovey & Grewel, 2005).

These definitions of emotional intelligence tend to be more similar than incongruous. All three models share similar use of domains of emotional intelligence, although each uses slightly different words to describe these domains. Each of the measurements are derived from varying ways of understanding and explaining emotional intelligence in an attempt to assess a person's internal management of their own emotions and those of others, but at different levels of the emotional experience. For example, Bar-On's work is based on personality and applies emotional intelligence to overall well-being and adaptation, while the ECI was initiated by examining performance and incorporating items based on behavior rather than personality. Both the ECI and MSCEIT focus on emotional intelligence as it relates to abilities. These two measures, in contrast to the EQ-i, measure emotional intelligence in terms of skills, rather than

personality traits, and are considered less malleable (Goleman, 2000; Boyatzis et al., 1996; Boyatzis, 2008).

Each of these three models shares a common theoretical orientation and desire to understand and measure the abilities and traits related to identifying and managing emotions in ourselves and others. At the same time, the authors represent unique sets of constructs and contexts in which they wish to frame their theories.

Emotional Intelligence and its Relationship to Business and Organizational Settings

There is growing research to support the value of emotional intelligence in business and organizational settings. For over a decade, the concept of emotional intelligence has gained attention and momentum in organizational and industrial psychology literature and in the corporate arena, showing its utility for predicting effective leaders (Abraham, 2004; Boyatzis, 2008, Cherniss, 2002). Recent research has found that individuals who were adept at identifying their own emotions and those of others showed better interactive skills, were more cooperative, and were more successful at work and in social environments in general (Brackett et al., 2003; Rhee, 2007; Schutte et al., 2001; Wolf, 2006).

Additional research supports the studies discussed above regarding emotional intelligence and work performance. In a study by Hunter, Schmidt, & Judiesch (1990) researchers analyzed the performance of jobs of medium complexity (e.g., sales clerks and mechanics). Top performers were twelve times more productive than those employees at the bottom level of performance and 85% more productive than the average worker. One third of this difference was due to technical skill and cognitive ability, while two-thirds was a result of emotional intelligence (Hunter, et al., 1990). Jacobs and

Chen (1997) reported similar data from a study of 40 different companies and found that emotional intelligence competencies were twice as important as intellect and expertise in distinguishing outstanding performers from average employees (Jacobs & Chen, 1997).

In another study, emotional intelligence was correlated with leadership abilities of software professionals. Singh (2007) sampled 210 male and 130 female software professionals working at a software technology company in India to investigate the relationship between organizational leadership and emotional intelligence. Significant relationships were found between emotional intelligence and organizational leadership abilities. The results suggest that employee emotional intelligence was correlated with effective leadership behavior (Singh, 2007).

Leadership skills and emotional intelligence were also rated higher among managers at Johnson and Johnson Consumer and Personal Care Group. Researchers assessed leadership competencies of three hundred and fifty-eight managers to determine if there were specific leadership competencies that distinguished high performing managers from average employees (Cavallo & Brienza, 2004). Subjects were randomly selected to take the ECI. Managers who were high performing leaders were rated with a 4 point or higher score (out of 5) on all four domains in the Emotional Competence Inventory. High performance managers rated significantly higher on thirteen of the eighteen competencies. The six competencies found to be most distinguished amongst high performing managers in the study were; self-confidence, achievement orientation, initiative, leadership, influence and change catalyst. The study revealed a strong relationship between outstanding management skills and emotional competence,

supporting the theorist's assumption that emotional intelligence is a distinguishing factor in outstanding leadership performance (Cavallo & Brienza, 2004).

Similar results were found in a recent study of urban school principals from a large Midwestern urban school district was conducted by Williams (2008). The study included a sample of 12 outstanding and eight average principals and analyzed data to differentiate between the two performance groups. There were significant differences between outstanding and average principals in five of nine ECI emotional intelligence competencies (self-confidence, achievement orientation, initiative, organizational awareness, leadership, and team and collaboration). Principals with high emotional intelligence competencies were also better able to identify challenging and realistic goals for school improvement (Williams, 2008).

Like the previous studies by Cavallo and Brienza (2004) and Williams (2008), Goleman (1998) identified self-confidence with employees who demonstrated the ability to accept challenges and make and sustain difficult decisions. He identified a positive correlation between promotions and the competency of self-confidence in his study of managers at AT&T (Goleman, 1998).

Leadership skills and emotional intelligence have been found to be related thus far. In another study linking these constructs, Lopes, et al. (2006) explored the work performance of 44 analysts and clerical administrative employees from a U.S. insurance company. Controlling for relevant personality and demographic variables, MSCEIT total emotional intelligence score correlated r=0.28 to 0.45 with company rank, higher merit increases, peer and supervisor rated sociability, and rated contribution to positive work environment. In a similar study, Rosete and Ciarrochi (2005) examined 41 executives

from a large Australian public service organization. After controlling for IQ and personality traits, total MSCEIT scores were correlated r=0.35, with higher performance on motivation and integrity. These studies demonstrate that higher emotional intelligence is associated with better performance at work (Rosete & Ciarrochi, 2005).

Emotional intelligence was significantly related to performance of team leaders and team effectiveness in a study by Koman and Wolff (2007). The purpose of the research was to determine if emotional competencies were significantly related to performance of team leaders who had a direct and positive influence on team effectiveness. 422 military employees participated in this study which showed that team level emotional intelligence affects team performance (Koman & Wolff, 2007). This study is relevant to the present study because health care professionals work in interdisciplinary teams and may benefit from training in emotional intelligence to enhance job performance.

In a comparable study of more than 2,000 managers from 12 major organizations and corporations, 81% of the skills that distinguished outstanding managers from average employees were specifically related to emotional intelligence (Boyatzis, 2008; Boyatzis et al., 1996). This study supports similar descriptions of studies that show that high performers in leadership positions utilize more emotional intelligence than average performers. Elfenbein, Der Foo, and Boldry (2006) found modest but significant scores on the MSCEIT, r=0.25 to 0.45, to indicate a correlation between workplace effectiveness and emotional intelligence in a variety of professionals such as physicians, human care service workers, school teachers and principals, and business managers (Elfenbein, Der Foo & Boldry, 2006)

In a study of financial advisors at American Express, advisors of managers who completed an EI training program were compared to an equal number whose managers had not (Goleman, 2000). During the year following training, the advisors of trained managers grew their businesses by 18.1% compared to 16.2 % for those whose managers were untrained. Findings suggest that training programs and workshops may be effective at improving emotional intelligence (Goleman, 2000).

A similar study was conducted to determine whether emotional intelligence training programs were effective for a large number of sales representatives in the Pittsburg Pennsylvania area (Manna & Smith, 2004). A survey of 515 professional sales representatives showed that several key emotional intelligence skills were associated with performance. Participants in the study suggested that this type of training would have been useful to them while they were in college (Manna & Smith, 2004).

Training programs and workshops may be effective at improving emotional intelligence graduate students preparing to enter the work force. A published study of MBA graduate students at Case Western Reserve University using emotional intelligence training showed improvement of one or more competencies show an overall improvement of about 10% three to eighteen months following training (Boyatzis, 2008). The graduate program in executive education at Case Western University utilized the same emotional training program which showed that each student, ages 45-55, demonstrated improvement on self-confidence and leadership abilities. Findings suggest that training programs and workshops may be effective at improving emotional intelligence, although further research is necessary to identify whether specific

competencies should be targeted rather than overall improvement of non-targeted competencies by participants (Sala, 2002)

The findings of the studies discussed above indicate emotional intelligence is a significant factor in professional success. The literature suggests that emotionally intelligent managers who are effective leaders tend to be happier and more committed to their organization and achieve higher success (Abraham, 2004; Boyatzis et al., 1996; Boyatzis, 2008, Cherniss, 2002). With the corporate world spending millions of dollars each year to develop effective work forces, management teams and senior leaders, research indicates that incorporating emotional intelligence assessments, training and development should be considered. Organizations may consider investing their resources to enhance the selection process of potential employees with high emotional intelligence or training its employees to improve emotional intelligence and leadership effectiveness in the workforce (Boyatzis, Stubbs & Taylor, 2002).

Emotional Intelligence and its Relationship to Academic Performance

Many graduate and professional programs teach students how to develop analytical skills but are just beginning to embrace the use of emotional intelligence skill to prepare them as practitioners. The completion of undergraduate and graduate requirements typically serves to ensure that those able to pass such rigorous academic requirements are above average intelligence and will likely do well in their chosen occupation. Yet, the accomplishment of credentialing procedures alone does not guarantee that a person will be an excellent doctor, therapist, nurse, accountant, or CEO. Rather, a person who possesses both good intrapersonal and interpersonal competencies

is more likely to be a successful leader and show outstanding achievement of their life goals (Abraham, 2004; Cavallo & Brienza, 2002; Jaeger, 2003; Rhee, 2007).

The underlying core of emotional intelligence is emotional competence, the prerequisite for successful task mastering capabilities (Cherniss, 2002; Sala, 2002). Although, the foundation for social skills are often set early in life, with focused training and reinforcement, emotional competencies, like technical skills, can be learned and sustained over time (Cherniss, 2002). Understanding how emotional intelligence is related to learning and academic performance could assist academic programs in recruitment, designing curricula that maximize student academic achievement, and ultimately better prepare students for the work environment (Abraham, 2004; Cavallo & Brienza, 2002; Jaeger, 2003).

Today graduate management degree program, medical schools and health related programs have acknowledged the importance of emotional intelligence in the world of organizations. Some faculty members see emotional intelligence development as the responsibility of the career placement office or non-credit courses. Faculty concerns that improvements in emotional intelligence could detract from improvement of cognitive abilities. Studies showed that, in fact, emotional intelligence training enhanced development of critical thinking ability (Boyatzis & Saatcioglu, 2008).

A number of studies have examined the impact of emotional intelligence on academic performance. In a study using the MSCEIT, Halberstadt and Hall (1980) found a relationship between emotional intelligence, performance on standardized tests, and academic performance. The findings revealed a small but significant relationship

between the ability to identify nonverbal expression and cognitive ability assessed by standardized tests and academic performance of college applicants.

Programs which are designed to increase emotional intelligence skills have been shown to be successful, supporting contentions that emotional intelligence can be learned in various educational and work settings. The ECI is beginning to be used by teachers, educators and administrators, such as the graduate program for school superintendents at Hunter College, Columbia University, and other academic settings in the United States, UK, and South Africa (Boyatzis et al., 1996; Goleman, 1998; Sala, 2002).

Emotional Intelligence and the Health Related Professions

There is growing empirical literature that suggests emotional intelligence may provide a valuable framework for the health professions. If being able to identify and manage one's emotions is an essential component for success at work and in most areas of life, then how much more are these skills needed in health care, where practitioners interact with patients and clients in need of their services and subsequently affected by the behaviors of their practitioners? (Jordan, Ashkanazy, & Hartel, 2002; Landy, 2005; Van Roo & Viswesvaran, 2004).

Greater demands are placed on emerging health care practitioners to fulfill multiple roles while providing quality care services in a time of limited fiscal and human resources (examples include: therapist, administrator, advocate, consultant and entrepreneur). Clinicians are required to utilize increasingly technological networks, systems thinking, and engage in interdepartmental collaboration and support to improve cost effectiveness. Interpersonal and psychosocial skills are considered core competencies of health care providers. However, practitioners may become more

technical at the expense of human qualities such as empathy and compassion. Interpersonal and psychosocial skills are considered core competencies for health care providers, although, as clinicians are more frequently asked to perform cost saving strategies imposed by insurance companies and legislative bills that may compromise quality of care (Freshwater & Sickley, 2004).

The current overemphasis on the importance of achieving outcomes threatens to diminish the basic values that served as the foundation of health care practice. Sensitivity to these issues and recognition of how to deal effectively with these challenges and changes in health care requires the use of emotional intelligence skills (Freshwater & Sickley, 2004). Incorporating EI in health care professions would help create a balance, while maintaining and enhancing what was at the essential core of a client centered approach (Meyer, Fletcher, & Parker, 2004).

Emotional intelligence is important for future success of employees in the healthcare professions. Cadman and Brewer (2001) identify key emotionally intelligent competencies recommended for nursing professionals to succeed in the current competitive health care system. These competencies include the ability to work collaboratively with interdisciplinary teams, the ability to recognize and respond to one's own and other's feelings (self-awareness), and the ability to motivate others (Cadman & Brewer, 2001). Strickland's (2000) work supports the insights and suggestions by Cadman and Brewer (2001) and maintains that emotional competencies as critical for future success in healthcare organizations (Strickland, 2000).

Several emotional competencies were identified by Strickland (2000) as essential for the nursing profession. The ECI competencies that she recognized which

distinguished outstanding nursing managers from average employees were: self-awareness, self-management and emotional self-control, relationship management competencies such as, empathy and teamwork. Excellent performance by top-level nursing managers resulted in; increased profitability, patient and client satisfaction, as well as contributing to the overall morale, motivation, and cooperation of co-workers (Strickland, 2000).

Strickland refers to self-awareness as an important element in effective nursing practice. A clinician who is self-aware recognizes his or her emotions and their effect on others in a therapy session, supervisory meeting, or interdisciplinary conference, and is able to develop and maintain positive relationships with colleagues and patients. Self-awareness provides a road map toward making adjustments on the job, motivating oneself and others, and assessing others' feelings to lead and motivate others. With self-awareness, a health care practitioner is better prepared to manage his or her emotions and behaviors and better understand and relate to others and organizational systems in general (Cavallo & Brienza, 2002; Goleman, 2000).

Strickland (2000) identified empathy as another key competency for nursing managers who wish to facilitate change in their current systems. Empathetic leaders are able to understand what makes others tick, guide and inspire others, and establish trust among staff members. The establishment of trust among team members is vital for performance and determines the quality of relationships amongst team members. In a study of nursing leadership by McCallin and Bamford (2007), results demonstrated that leaders in the nursing profession with high emotional intelligence scores were more able to adapt their leadership style to the needs of staff than did their peers (McCallin &

Bamford, 2007). In two similar studies of nursing leadership and emotional intelligence, ECI emotional intelligence was positively correlated to staff adaptation in times of change, and improved interdisciplinary relationships and patient satisfaction (Cummings, 2005; Snow, 2001).

An accurate appraisal and discernment of patient emotions has a positive impact on the quality and accuracy of history taking and diagnosis. If practitioners are able to better understand patients' emotional reactions, treatment plans, and suggestions for lifestyle changes, they may be able to understand why some interventions are more or less acceptable to patients and plan interventions appropriately (Rao, 2006). This ability to perceive, encourage, and guide patient compliance is an important skill for clinicians who wish to enhance patient-centered care, improve the quality of their professional relationships, and increase patient satisfaction and compliance.

Similar studies have been conducted to explore the relationship between patient satisfaction and health care professional's emotional intelligence. Wagner, Ginger, Grant, Gore, and Owens (2002) investigated the relationship between patient satisfaction and physicians' emotional intelligence scores as assessed by using the Bar-On EQ-i. Thirty family medicine faculty members and 232 ambulatory patients were recruited for this study. When correlating relationship satisfaction scores, only the subscale of "happiness" correlated with patient satisfaction. The research indicates that health care professional's satisfaction in his or her own life and his or her personal happiness was a component in maximizing a patient's satisfaction with health care services (Wagner, Ginger, Grant, Gore, & Owens, 2002).

The study reported a significant relationship between physician's level of emotional intelligence and patient satisfaction (Wagner et al., 2002). Similarly in another study by Akerjoret and Severinsson (2004), emotional intelligence in the nursing profession was been found to result in more positive attitudes, greater adaptability, and improved relationships between nursing staff and their patients and staff (Akerjoret & Severinsson, 2004).

A study of 180 Dutch nurses using the Bar-On EQ-i revealed the importance of emotional intelligence in reducing professional burnout. This study of nurses working in a mental health setting the results showed a significant relationship between emotional intelligence abilities such as responsibility, commitment, and motivation and overall job performance (Gerits, Derksen, Antoine, & Verbrugge, 2004).

In another study of emotional intelligence and health care professionals, emotional intelligence was examined in a study of nurses in leadership positions. Codier, Kooker and Shoultz, (2008) found there was a significant relationship between levels of emotional intelligence and clinical performance of nurses in leadership role positions compared to nurses who were not in positions of leadership. This study is the first to show evidence that higher levels of performance in clinical staff nursing were related to higher emotional intelligence (Codier et al., 2008). Another study found that there was a significant relationship between nurses and emotional intelligence that was directly proportional to their years of professional experience (Humpel & Caputi, 2001).

Emotional intelligence has recently emerged as an important factor in identifying the potential abilities of graduates in the health professions to achieve success. Many graduate and professional programs teach students how to develop analytical skills but

are just beginning to embrace the use of emotional intelligence skill to prepare them as practitioners (Brackett, et al., 2003; Rhee, 2007; Wolf, 2006).

Admission committees typically consider a standard set of criteria including undergraduate grade point average, Medical College Admission Test (MCAT) scores, and letters of evaluation from faculty and premedical advisors, and interview scores. A more apt measurement outcome might indicate how well admission committees are able to identify students who will make good doctors. Carrothers, Gregory and Gallagher (2000) assessed emotional intelligence of 147 applicants at 3 medical schools. Pearson correlation coefficients were used on applicant GPA, interview scores, and Aptitude College Test. ACT (r=.084) and GPA (r=.138) were not well correlated with emotional intelligence scores. However, interview scores were correlated with emotional intelligence, r=.761. These results demonstrate the ability to measure attributes that indicate desirable personal and interpersonal skills in medical school applicants (Carrothers, Gregory & Gallagher, 2000).

In a similar study of medical students and emotional intelligence, Stratton, Elam, Murphy-Spencer, and Quinlivan, (2005) examined the relationship between emotional intelligence and clinical skills of medical students. Two scales, the Trait-Meta-Mood Scale (TMMS) and the Davis Interpersonal Reactivity Index (DIRI) were used to measure emotional intelligence of 177 medical students from the University of Kentucky College Of Medicine. Cronbach alpha assessment demonstrated internal consistency. Subsets ranged from .73-.90. Attention to feelings (p=.011), empathetic concern (p= .027), and perspective taking (p=.005) were modestly but significantly positively

relationship between student communication skills and emotional intelligence scores (Stratton, Elam, Murphy-Spencer, & Quinlivan, 2005).

In another example of the relationship between emotional intelligence and performance by medical students, Lam and Kirby (2002) used Salovey and Mayer's Multifactorial Emotional Intelligence Scale in a study to investigate the relationship between emotional intelligence and performance in medical graduate students. The results of this study showed that emotional intelligence was associated with higher improved overall cognitive-based performance (Lam & Kirby, 2002).

A multinational survey to examine the relationship between health professions education and training and stress to determine if increased emotional intelligence would result in better performance in academic training and decrease levels of stress. The cohort was 596 dental students from England, Greece, Romania, South Africa, the United States and Malaysia. Emotional intelligence scores were inversely related to perceived stress. T-tests were used to compare mean scores. Mean emotional intelligence and perceived stress scores were 117.5 (SD =14.9) and 17.7 (SD=6.5), respectively. The results suggest that dental students with greater degrees of emotional intelligence may be more adept at coping with academic stress and may improve academic performance as well as patient satisfaction (Pau, Rowland, Naidoo, Abdulkadir, Makrrynika, Moraru, Huang & Croucher, 2007).

Emotional intelligence has been discussed as a relevantly new concept in health care, a professional arena where it is imperative for practitioners to develop and maintain effective relationships with patient and staff (Cadman & Brewer, 2001; Cherniss, 2002; McQueen, 2004). This section has reviewed studies related to emotional intelligence in

academic, corporate and business industries, and health care environments. The emotional intelligence literature suggests that emotional intelligence drives professional success in human organizations and workplaces. There is evidence indicating that the specific emotional intelligence competencies are related to improved outcomes between practitioners and patients/clients. Although there are a relatively limited number of peer-reviewed studies, emotional intelligence has been identified as a particularly useful construct in the practice of nursing and health care and a worthy of further research as a predictor of performance. The next section of the literature will address emotional intelligence and its relevance to clinical training and the profession of occupational therapy.

Emotional Intelligence and the Profession of Occupational Therapy

Emotional intelligence may play a significant role in how future health practitioners interact with patients and clients (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993). The literature suggests evidence that emotional intelligence concepts should be developed further and included in medical and health science training programs, specifically in the profession of occupational therapy.

Over the years occupational therapy research studies have explored potential factors associated with success and failure in the clinical component of occupational therapy training programs. Most allied health profession programs, including occupational therapy, use GPA and GRE scores as part of admissions criteria (Best, 1994; Engelhart, 1957; Ford, 1979; Gutman, McCreedy, & Heisler, 1998; Katz & Mosey,

1980; Kirchner, Stone, & Holm, 2000; Lind, 1970; Mann & Banasiak, 1985; Scott, Chase, Lefkowitz, Morton-Rias, Chamber, Holmes, & Bloomberg, 1995).

Kirchner et al., (2000) was the first to examine the relationship between GRE scores and fieldwork performance, and found fieldwork scores were positively correlated with the analytic sections of the GRE scores and undergraduate GPA at statistically significant levels. This study supports the continued use of pre-OT undergraduate GPA and GRE to screen students for admission into occupational therapy programs. These results are similar to earlier studies (Bridle, 1987; Ford, 1979; Kirchner, et al., 2000).

Similar results were found with positive correlations between undergraduate GPA and ratings on the fieldwork performance evaluations in a study by Katz and Mosey (1980). Similarly, Mann and Banasiak (1985) used prerequisite course GPA as a predictor, and found positive correlations between ratings on fieldwork. Other factors related to fieldwork success or failure include the ability to cope with stress, clinical reasoning skills (Cohn, 1989; Martin, 1996; Mitchell & Kampfe, 1990; Sands, 1995; Tickle-Degnen, 1998; Westfall & Marken, 1998), interpersonal skills and professional behaviors (Scheerer, 2003), and emotional intelligence (Gutman et al., 1988).

In a particularly relevant study about fieldwork performance by James and Musselman (2005), the authors suggest that fieldwork failures are related to insufficiencies in the academic portion of the program as well as negative professional and social skills in students. Some of the areas that were cited as lacking in academic preparation were technical, problem-solving, and clinical reasoning skills. Professional and social skills that interfered with clinical performance were difficulty responding to constructive feedback, poor organizational skills, lack of flexibility, lack of initiative in

learning, and difficulty with understanding the bigger picture (James & Musselman, 2005).

The above authors suggest that students be offered additional opportunities to practice problem based learning prior to arrival at the fieldwork, to prepare them for clinical reasoning skills needed for their clinical internship. Academic programs should emphasize and require the development of clinical reasoning and problem solving in the classroom. Students should also be prepared to demonstrate professional behaviors and understand how to receive and respond to feedback with responsibility. Exposure to a greater array of active rather than passive learning experiences would better prepare students to the clinic environment.

The relationship between supervisor and student was identified by Hummel (1997) as factor having both positive and negative impacts on clinical performance. Hummel suggested that fieldwork supervisors take responsibility for more adequately preparing themselves to be fieldwork educators. Such preparation might include training workshops, use of on-line resources from state and national occupational therapy organizations, familiarity with particular learning style of individual students, and identification and management of performance problems early on in the fieldwork experience (Hummel, 1997; Kuen, 1997).

In a recent article about fieldwork performance by Fischer (2006), the author identified discrepancies between the items identified as entry level competencies on the American Occupational Therapy Association Fieldwork Performance Evaluation for occupational therapy Masters level students and the skills students learned while in the didactic portion of the curriculum. These entry-level competencies include collaboration,

receiving feedback from supervisors, interpersonal skills, respect for diversity, consistent work behaviors, and time management skills, corresponding to the ECI's emotional intelligence competencies of openness to candid feedback, conscientiousness, collaboration, and leveraging diversity.

Although Fischer acknowledges the supervisor's role as essential for modeling and reinforcing these competencies during fieldwork, she maintains that academic programs must share the responsibility of preparing students with the acquisition of these professional behaviors. In a similar study, Herzberg (1994) explored supervisors' perceptions of competencies associated with successful clinical performance. The characteristics that supervisors identified for success were flexibility, adaptability, and initiative in job performance. The author suggests that occupational therapy training curricula would benefit from incorporating assignments that facilitate the transition from abstract conceptualization in classroom learning to activities which facilitate active learning, adaptability, and flexibility (Herzberg, 1994).

Several of the key job performance abilities required by occupational therapists are comparable to the emotional competencies identified by Goleman (2000). Examples of occupational therapy related competencies include being aware of others' feelings and reactions, understanding why they react as they do, ability to listen and communicate effectively, establishing and maintaining interpersonal relationships, providing emotional support, collaboration with supervisor and team members, adaptability and flexibility, integrity, self-control, innovativeness, achievement, problem solving and time management skills.

As was noted previously in this literature review, cognitive and analytic styles are not sufficient indicators for academic and professional success and life satisfaction in general, and students who demonstrate behavior problems during the fieldwork experience may perform well in the academic environment. Student performance problems or difficult behavioral styles may be consequences of personality traits that are eventually exhibited in the clinical setting and could lead to potential fieldwork failure. Further research would provide knowledge of predictors that would allow for early identification of students at risk of clinical difficulties so that appropriate supports can be implemented to assist them to reach their full clinical potential (Tan, Meredith & McKenna, 2004).

Some commonly exhibited performance problems include increased stress when required to assume greater responsibility, lack of flexibility, low motivation and initiative, discomfort with ambiguity, difficulty learning from mistakes, and difficulty receiving feedback to modify behaviors evidenced by externalization of responsibility to justify one's behaviors (Gutman et al., 1998). A person's ability to perceive, identify and manage emotions provides the basis for the kinds of social and emotional competencies important for success in the work, and the individual's potential for mastering certain competencies leads to either success or failure in life's roles (Boyatzis, 2008; Cherniss, 2002).

The degree to which students possess or lack emotional intelligence may influence their fieldwork performance. A better understanding of the role of emotional intelligence in clinical performance will enable occupational therapy educators to evaluate and better design programs and course curriculum to more effectively meet the

academic and professional needs of their students (Gutman et al., 1998; Schutte et al., 1998) by integrating appropriate EI training in the academic realm of occupational therapy programs, to better equip students meet the challenges and changes in health care (Freshman & Rubino, 2002).

Chapter 3: Research Method

At the present time there has not been research to explore the relationship between emotional intelligence and clinical performance in occupational therapy. The main objective of this current study was to investigate the relationship between emotional intelligence and clinical performance in an occupational therapy training program. The answer to this question is significant because it may indicate that emotional intelligence plays an important role in how health practitioners interact with patients and clients; it may also determine whether emotional intelligence plays a role in student success or failure in clinical performance. If this relationship exists, it holds promise for integrating appropriate emotional intelligence training in the academic realm of occupational therapy programs to better equip students to meet the challenges and changes in health care (Freshman & Rubino, 2002; Gutman, McCreedy, & Heisler, 1998; Schutte, et al., 2001).

Restatement of Research Questions/Hypotheses

The first research question asked whether there was a relationship between student self-assessment of emotional intelligence as measured by The Emotional Competence Inventory (ECI), and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. It was hypothesized that a significant relationship exists between student self-assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI), and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation.

The second research question asked whether a relationship exists between supervisors' assessment of student emotional intelligence as measured by the Emotional Competence Inventory (ECI) and fieldwork performance as measured by the score of the American Occupational Therapy Association's Fieldwork Performance Evaluation. It was hypothesized that a significant relationship between the supervisor's assessment of student emotional intelligence as measured by The Emotional Competence Inventory (ECI), and the predictor of fieldwork performance, as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation.

The third research question asked whether there was a relationship between student self-perception of emotional intelligence and the fieldwork supervisor perception of student emotional intelligence as measured by the Emotional Competence Inventory (ECI). It was hypothesized that there was a significant relationship between student self-perception of emotional intelligence and the fieldwork supervisor perception of student emotional intelligence as measured by the Emotional Competence Inventory (ECI).

Research Method and Design

The current study used a quantitative non-experimental correlational design to investigate the relationship between emotional intelligence and student clinical performance in an occupational therapy training program. Two measurements were used to collect all the data: the Emotional Competence Inventory (ECI-2.0) and the AOTA Fieldwork Performance Evaluation.

Participants

Graduate students enrolled in the occupational therapy program at the New York Institute of Technology at the time of this study were participants in this research. A

non-random sampling design and a convenience sampling method were used because the researcher has access to this particular group. The 45 subjects of this study represent the total number of students enrolled in the occupational therapy program and who agreed to participate in the study. There were 40 female and 5 male students. With only 5 male subjects, and correlation results consistently similar and low, separate analyses were not conducted. The students were adults of diverse ethnic, socio-economic and educational backgrounds, job-levels and experience backgrounds, and all living in the greater New York City area. No other specific demographic information was collected; only scores from the two measurements were used for this study.

The clinical fieldwork experience took place following the completion of the two-year didactic portion of the academic program. The researcher invited students and clinical supervisors to serve as participants in the study following the completion of the final 12 week fieldwork. The Emotional Competence Inventory was used to rate students' emotional competencies during the fieldwork and completed by participants following the 12 week fieldwork. Participants were each given the same instructions to complete the Emotional Competence Inventory. The researcher explained the value of the study as having potential to determine elements needed to ensure success in the clinical setting and ways that the curriculum may be improved in the future. The researcher explained the two measurements used in the study (The Emotional Competence Inventory and the American Occupational Therapy Fieldwork Performance Evaluation) as well as the purpose of the consent form. The researcher explained that the proposed analysis would be completed using the last four digits of the student social security number to assure anonymity and that the information would be stored on a

password protected computer, in a locked office. Participants were assured that if they did not wish to participate in the study, or if they wanted to withdrawal at any time, there would be no negative consequences.

Materials/Instruments

The instruments used were: The Emotional Competence Inventory (ECI-2.0) and the American Occupational Therapy Fieldwork Performance Evaluation. The ECI includes 72 questions designed to measure 18 competencies, organized into four domains. Each of the 18 competencies is defined as a specific capability or ability linked to and based on emotional intelligence. The ECI has a five-point rating scale with a "don't know" option that is not factored into the score. The ECI is an informant report instrument, otherwise termed a multi-source feedback assessment, or *360* for short. A 360 assessment asks people from different groups to obtain a consensus view of the patterns in a person's use of their emotional competencies. These views may come from supervisors, peers, clients, classmates, or friends. To get an accurate assessment of a person's emotional intelligence a minimum of 4 to 5 raters is suggested, preferably with different perspectives of the person from different contexts (Boyatzis et al., 1996; Boyatzis, 2008; Goleman, 2000; Wolf, 2006).

Self ratings and single-rater assessments are useful for providing developmental feedback but do not give valid and reliable measures for research purposes. Such results should be used with caution as the sole measure of emotional intelligence. Individuals high in accurate self-assessment tend to have smaller gaps, while those with higher level positions in organizations and lower performance, the more likely self-rating tends to be inflated (Wolf, 2006).

The ECI's four domains of competencies include: (1) Self-awareness, (2) Self-management, (3) Social awareness, and (4) Relationship management (Boyatzis, 2008; Wolf, 2006). The Self–awareness domain has 3 competencies. Twelve out of seventy-two of the ECI question items are associated with this domain, with total possible score range of 60. The second domain, self-management domain has 6 competencies and 24 out of 72 items pertaining to this domain for a possible total score of 120. Social–awareness has 3 competencies, 12 question items and a possible total score of 60. Relationship management has 6 competencies, 24 items and a total range of 120 (Wolf, 2006).

Each competency may or may not be relevant to any specific job and should be validated against the performance requirements for a particular job. A match between competency level and job task may be more important indicator of performance than higher average scores. There are optimal levels for competency for specific jobs, therefore higher average scores may not always translate into better performance. An individual with optimal scores which correspond to competencies for a specific job may perform better than someone with higher average scores (Wolf, 2006).

Reliability analysis with large samples using the ECI has shown very high internal consistency; however, evidence for test-retest reliability is limited (Brackett & Mayer, 2003). The overall average internal consistency coefficient of .75 indicates very good internal consistency reliability for the ECI (Brackett & Mayer, 2003; Wolf, 2005). The ECI competencies are highly intercorrelated, thus achieving good factorial validity is difficult. This refers to the average of the correlations among all single test items. The ECI demonstrates a very good degree of content and construct validity compared with

various measures of similar constructs, while demonstrating less association with more cognitive assessments of abilities (Brackett & Mayer, 2003; Wolf, 2006).

All accredited occupational therapy training programs use the American Occupational Therapy Association's Fieldwork Performance Evaluation (FWPE) for evaluating occupational therapy students' clinical performance. Clinical performance is measured by the student's fieldwork evaluation grade that is provided by the clinical educator. There are 42 items with a Likert scale of 1-4, with 4 being the highest possible score. A passing score of 122 is required with a failing score being any score of 121 and below. (Alter, 2003).

This evaluation form is not standardized or normed but is objective in that the students have specific criteria on the evaluation that they must meet in order to pass the clinical and meet the necessary qualifications to graduate and sit for the national exam. The tool appears to reflect current practice concepts and functions as a measure of entry-level competency of occupational therapy graduate students across practice settings.

Graduate programs in occupational therapy require two twelve-week full-time fieldwork placements. Fieldwork usually takes place following the completion of the didactic course work of the program. However, some programs place one of the fieldwork experiences after the first year of the academic program. Students are allowed to choose the area of practice for fieldwork, providing there is some variation in the type of population to give the student as varied an experience as possible in preparation for being an entry level therapist. Most supervisors provide a week of observation and orientation. This allows the student to gradually acquire skills and an independent case load of at least five patients by the sixth week, or midterm point in the fieldwork.

Supervisors are expected to be available to students for supervision a minimum of eight hours a week. Supervisors generally provide more direct supervision during evaluations and interventions in the first six weeks and gradually decrease to a minimum of eight hours. Supervision can range from informal to more structure depending on the teaching style of the supervisor and the student's learning style and clinical abilities. A typical supervisor and student relationship would include a half hour to an hour at the end of the day. The supervisor uses the Fieldwork Performance Evaluation at midterm and during the final week to monitor and evaluate the student's progress toward becoming an entry level occupational therapist.

Procedure

Two measurements were used; the Emotional Competence Inventory (ECI-2.0) and the AOTA Fieldwork Performance Evaluation. The Emotional Competence Inventory was used to rate students' emotional competencies during the fieldwork experience and completed by participants following the 12 week fieldwork experience. Participants were each given the same instructions to complete the Emotional Competence Inventory. The researcher explained the two measurements used in the study (The Emotional Competence Inventory and the American Occupational Therapy Fieldwork Performance Evaluation) as well as the purpose of the consent form. The researcher explained that the study would utilize the last four digits of the students' social security number to assure anonymity and that the information would be stored on a password protected computer, in a locked office. The results database was accessible to the researcher only through the use of a username and password.

Data Collection, Processing and Analysis

Emotional intelligence was assessed for each student through four domains of emotional competencies and measured by the Emotional Competence Inventory (ECI-2.0). Students completed the instrument on themselves and Clinical supervisors also completed the ECI on the student that they supervised for fieldwork. Clinical performance scores were provided by the clinical supervisor with the use of the AOTA Fieldwork Performance Evaluation to assess entry-level performance for the fieldwork experience.

The software used to analyze the data was the SPSS (Version 16) statistical software package. Descriptive statistics were calculated to obtain the mean, standard deviations, and standard error. Pearson correlation procedures were used to see if there was a relationship between supervisor and student emotional intelligence scores and fieldwork score. The data describes the scores of 18 ECI competencies clustered into four groups. Analyses considered correlations between student self-reported ECI competencies and fieldwork performance assessments, and between supervisor assessment of student ECI competencies and fieldwork performance assessments using Pearson correlation coefficients.

Methodological Assumptions, Limitations, and Delimitations

This study was limited by the sample size of the class at the time of the study. The researcher selected a convenience sample rather than a random sample. Therefore the findings may not be applicable to a larger, more diverse group. Another possible limitation of the study may be the bias of using student self-reports and the single rating of the fieldwork supervisor. The Hawthorne effect occurs when participants alter their

responses as a result of participating in a research study. For example, the students may have been motivated to rate themselves higher on emotional intelligence in order to project a more positive image of themselves. However, if the students felt that the study may have potential benefits to them or future students in the program, they may be more likely to provide honest responses.

Confounding extraneous participant variables may have presented additional limitations in the study. Such variables may include any inconsistencies or fluctuations by the researcher, participants (such as age, prior work experience, marital status), environment (the use of various clinical settings), or in the application of measurement tools. These conditions or variables may have influenced and weakened the results of the study, but were not variables that the researcher wished to examine. The before mentioned confounding variables tend to have more influence in studies which test causal hypotheses.

Ethical Assurances

Research was approved by and abided by the standards outlined by the NCU *Institutional Review Board* (IRB). Each participant received a "Research Information/ Consent Form" (Appendix). The researcher invited students and clinical supervisors to serve as participants in the study. The researcher explained the value of the study as having potential to determine elements needed to ensure success in the clinical setting and ways that the curriculum may be improved in the future. Participants were not deceived or misled, and responses remained anonymous. Participants did not receive compensation or payment.

Summary

This chapter gave description of the research methods and design, access to participants, materials and instruments, data collection and processing, and analysis of study procedures. Methodological assumptions, limitations and delimitations and ethical assurances were described.

Chapter 4: Findings

Overview

The purpose of this study was to determine whether there was a relationship

between emotional intelligence and student clinical performance in an occupational

therapy graduate program. This chapter describes the data collected for this study and the

results of the analyses of the data. The software used to analyze the data is the SPSS

(Version 16).

Results

Summary of student ECI and supervisor ECI scores and fieldwork scores are

below (see Table 1). The study included 45 students and supervisors. All 45 students

passed the fieldwork course.

Table 1:
Summary of Student ECI and Supervisor ECI scores and Fieldwork Scores

Analysis	Mean	Std Deviation	n	Min Score	Max Score
Student ECI	270.8	28.5	45	199	326
Supervisor ECI	243.6	43.9	45	162	324
Fieldwork Score	139.0	14.7	45	122	168

Individual Research Questions and Results

Student ECI and Fieldwork Score. The first research question was "Is there a

relationship between student self-assessment of emotional intelligence as measured by

The Emotional Competence Inventory (ECI) and fieldwork performance as measured by

the score of the American Occupational Therapy Association's Fieldwork Performance

Evaluation?" The associated hypothesis was that there would be a significant relationship between student self-assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI) and fieldwork performance score. Correlations between student ECI scores and fieldwork scores were not significant (see Table 2), r (45) = -.128, *p*=.402.

Supervisor ECI and Fieldwork Score. The second research question was "Is there a relationship between supervisor's assessment of student emotional intelligence as measured by The Emotional Competence Inventory (ECI) and fieldwork performance as measured by the score of the American Occupational Therapy Association's Fieldwork Performance Evaluation?" The associated hypothesis was that there would be a significant relationship between supervisor's assessment of emotional intelligence as measured by The Emotional Competence Inventory (ECI) and fieldwork performance score. Supervisors' scores between student ECI and fieldwork scores were significant (see Table 2), r (45) = .354, *p*=.009. It should be noted that a correlation of .354 is considered of average to low strength.

Student ECI and Supervisor ECI. The third research question was "Is there a relationship between student self-assessment of emotional intelligence and supervisor's assessment of student emotional intelligence as measured by the Emotional Competence Inventory (ECI)?" The associated hypothesis was that there would be a significant relationship between student self-assessment of ECI and supervisor's assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI). Correlations between student self scores of emotional intelligence and supervisor's scores of student ECI were not significant (see Table 2), r (45) =.095, *p*=.530.

Table 2:
Correlations among Student ECI, Supervisor ECI and Fieldwork Scores

Analysis	n	r	p
Student ECI and FW Score	45	-.128	.402
Supervisor ECI and FW Score	45	.354	.009
Student ECI and Supervisor ECI	45	.095	.530

Supplemental Findings

A two-tailed related-samples t-test between total ECI scores of students and supervisors found that students rated themselves significantly higher on the ECI (M=270.8, SD= 28.54) than supervisors rated them for total scores on the ECI (M=243.6, SD=43.9), t=-3.64, p=.001. In order to further clarify why student self-assessment scores on the ECI were generally higher than those of their supervisor's scores, additional levels of comparisons were done. Correlations between the four domains of 18 competencies were not significant (see Table 3), and means for all four domains were significantly different by two-tailed related samples t-test (see Table 4), confirming that students rated themselves consistently higher on all four levels of competencies.

Table 3:
Correlations of Student and Supervisor ECI Domains

Student and Supervisor assessment of:	n	r	p
Self-awareness	45	.062	.684
Self-management	45	.130	.395
Social awareness	45	.055	.721
Relationship management	45	.095	.536

Table 4

Two-tailed related samples t-test of Student and Supervisor four ECI Domains

Student and Supervisor	Student	Stu	Supervisor	Sup		
assessment of:	*mean*	*SD*	*mean*	*SD*	*t*	*p*
Self-awareness	46.07	5.17	40.44	7.45	4.29	.000
Self-management	90.38	9.05	81.89	14.4	3.56	.001
Social awareness	49.29	5.89	45.91	8.13	2.31	.025
Relationship management	85.24	11.6	75.36	17.2	3.35	.002

Analysis and Evaluation of Findings

There was no significant relationship between student self-assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI), and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. A small but significant relationship exists between supervisor scores of student emotional intelligence as measured by the Emotional Competence Inventory (ECI) and clinical performance scores, suggesting that supervisors were consistent in their scoring of the student's emotional intelligence and the student's clinical performance. If, for example, a supervisor rated a student either high or low on the ECI, they scored the student high or low on their clinical score. However, this study did not address the question of whether the supervisor's scores accurately reflected the student's performance.

Summary

There was no relationship between the students' self-assessment of ECI scores with supervisors' ECI scores, and no relationship between student self-assessment of ECI with clinical performance scores. However, results indicate that there is a small relationship between supervisor ECI scores and clinical performance scores with average to low strength. Students' self-assessment of ECI scores were generally higher than the supervisors' assessment of student ECI.

Chapter 5: Implications, Recommendations, and Conclusions

At the time this study was conducted, occupational therapy training programs had not yet investigated the relationship between clinical performance in fieldwork and whether emotional intelligence plays a significant role in the success or failure in this component of the curriculum. It was hoped that understanding the relationship between emotional intelligence and clinical performance would indicate areas for enhancing occupational therapy curricula to better prepare future health practitioners.

The current study used a quantitative non-experimental correlational design. The design allowed the investigation of the relationship between emotional intelligence and student clinical performance in an occupational therapy training program. Two measurements were used to collect all the data; the Emotional Competence Inventory (ECI-2.0) and the AOTA Fieldwork Performance Evaluation.

Limitations of the Study

A convenience sample was used, rather than random sampling, because the researcher had access to this particular group. Utilizing a more diverse and larger sample size of students from other occupational therapy programs or other health professions may have made the findings more applicable. Future studies could benefit by increasing the sample size (this study, n=45), and broadening the scope to include other occupational therapy programs and additional college health related training programs.

The findings show that there was no correlation between student ECI and supervisor ECI. This was likely the result of another limitation of the study, the bias of using student self-reports and the single rating of the fieldwork supervisor. This finding confirms the literature which maintains that the ECI is intended to be a 360-degree, or

multi-rater measurement (Wolf, 2006). To achieve an accurate assessment of a student's emotional intelligence the use of multiple raters is recommended to avoid skewed results.

Another limitation of the study was the narrow range of scores on both measures. All the students in this study passed their fieldwork within a small set of similar scores. If a larger cohort, or sample size, was used or if the range of scores had been greater there might have been greater variance and a more powerful correlation.

A possible explanation for low variance might be that students who are accepted to occupational therapy programs have self-selected this profession and already have above-average emotional intelligence. The occupational therapy curriculum has interactive courses where students are socially active and regularly required to use skills related to emotional intelligence. If students do poorly, they get coached in these areas or weeded out of the program before they reach the point of the clinical experience. Although even in this small cohort there was a significant relationship which supports this assumption that students who do well in the clinic also have good emotional intelligence (Cadman & Brewer, 2001; Gutman et al., 1998; James & Musselman, 2005; Tickle-Degnen, 1997).

A final limitation may have been the result of having several similarities in the content of items on both measures. This may have resulted in supervisor bias when completing the measures. If the supervisor perceived the student as having good emotional intelligence this may have effected how he or she graded the student on the fieldwork evaluation. Although this may represent a limitation of the study, the researcher was hoping to find a positive relationship between emotional intelligence and fieldwork performance, which was found.

Implications

The primary goal of the present study was to explore the relationship between student emotional intelligence and clinical performance in an occupational therapy program. The first research question asked whether there was a relationship between student self-assessment of emotional intelligence as measured by the Emotional Competence Inventory (ECI), and fieldwork performance as measured by the American Occupational Therapy Association's Fieldwork Performance Evaluation. There was no significant relationship between student self-assessment of emotional intelligence and clinical performance.

An interpretation of this finding is that occupational therapy students who participate in the clinical portion of the program are not able to objectively and critically evaluate their clinical skills at this juncture in their career. Even after the successful completion of fieldwork, students are still only considered entry level, or beginning therapists. The supervisors' scores are more important since they are responsible for evaluating student fieldwork performance. This finding also confirms the literature which maintains that the ECI is intended to be a 360-degree, or multi-rater measurement. To achieve an accurate assessment of a student's emotional intelligence the use of multiple raters is recommended to avoid skewed results (Sala, 2002; Wolf, 2006). In reviewing the results of this finding it would make sense that there was no correlation between student perception of emotional intelligence and fieldwork scores.

The second research question asked whether a relationship exists between supervisors' assessment of student emotional intelligence as measured by the Emotional Competence Inventory (ECI) and fieldwork performance as measured by the score of the

American Occupational Therapy Association's Fieldwork Performance Evaluation. There was a modest but significant relationship between supervisor's assessment of ECI and fieldwork performance. These results indicate that there is a relationship between supervisor ECI scores and clinical performance.

The results of the second research question suggest the supervisors were consistent in their scoring of the students' emotional intelligence and the students' clinical performance. If, for example, a supervisor rated a student either high or low on the ECI, similarly, they scored the student high or low on their clinical score. The supervisor's perception of student fieldwork performance may have influenced their scoring of emotional intelligence. Alternatively, a student with high emotional intelligence may use this understanding to perform well clinically, thus perceived by the supervisor as a competent performer (James & Musselman, 2005; Tan, Meredith & McKenna, 2003; Tickle-Degnen, 1997). The ratings of clinical performance may have been influenced by rater's perceptions about student's emotional intelligence. James and Musselman (2005) and Tickle (1997) have suggested that a factor in the fieldwork experience is the relationship between the supervisor and the student. Future occupational therapy research should further ascertain to what degree do student-supervisor relationship factors contribute to performance ratings. It is not possible to determine causation from the findings of this present study because this was a correlational design. The main point is that there were similarities between scores.

There are twelve items on the two measures with similar content. Some of these occupational therapy related entry level competencies include being aware of others' feelings and reactions, understanding why they react as they do, ability to listen and

communicate effectively, establishing and maintaining interpersonal relationships, providing emotional support, collaboration with supervisor and team members, adaptability and flexibility. The AOTA FWPE items are weighed with a greater amount of occupational therapy practice items than those related to emotional intelligence, making a higher correlation between emotional intelligence and clinical competencies unlikely to be found (Alter, 2003; Wolf, 2006).

A stronger correlation for this finding would not have been found because emotional intelligence is not the only factor that affects fieldwork scores. The majority of items on the AOTA Fieldwork Performance Evaluation do not require a student to be emotional intelligent but rather pertain to fundamental areas of practice such as patient evaluation and screening, intervention, and management of occupational therapy services. Most health professional competencies take into consideration science based knowledge, clinical reasoning and manual skills which are based on intellectual processes (Alter, 2003; Wolf, 2006).

The third research question asked whether there was a relationship between student self-perception of emotional intelligence and the fieldwork supervisor perception of student emotional intelligence as measured by the Emotional Competence Inventory (ECI). The study results showed that there was no significant relationship between student self-assessment of emotional intelligence and supervisor assessment of student emotional intelligence.

This finding again confirms the literature that the ECI is intended to be a 360-degree, or multi-rater measurement (Sala, 2002; Wolf, 2006). The ECI results of multi-raters are useful to individuals because they provide feedback on the discrepancy between

a person's self-perceptions and how they were rated by others. To achieve an accurate assessment of a student's emotional intelligence the use of multiple raters is recommended to obtain a more accurate consensus view of the subject from persons with different perspectives (Wolf, 2006). Future studies might include the use of multiple raters such as additional faculty members to give a clearer evaluation of the student and to mitigate the affects of the relationship between supervisor and student.

It is also possible that the supervisor was not able to get a true picture of student's emotional intelligence because the supervisor didn't observe the student's emotional intelligence skills or only perceived the student in their one role and context-which is a new role for the student. A student's emotional intelligence may be overshadowed by the fact that they are been critically evaluated. Although the students in this study passed their fieldwork, supervisor ratings of emotional intelligence were lower than the student self-ratings. The occupational therapy literature suggests that stress and fieldwork performance have been positively related and may be associated with student diminishment of and lack of demonstration of emotional intelligence skills (Tan, Meredith & McKenna, 2003; Tickle-Degnen, 1997). The first and third research questions both confirm the literature that self-ratings are not valid and reliable and that multiple raters are necessary to show greater consensus in patterns in a person's use of emotional competencies (Sala, 2002; Wolf, 2006).

A premise of the study was that student and supervisor emotional intelligence scores would be similar. Additional analyses were conducted to further clarify as to why student self-assessment scores on the ECI were generally higher than those of their supervisor's scores. The two-tailed related samples t-test found that students rated

themselves significantly higher on the ECI than supervisors rated them on the ECI. An additional Pearson correlation and two-tailed related samples t-test were conducted to better explain the differences between the means of each domain between student and supervisor ECI scores. Pearson correlations among the four domains of 18 competencies were significant, confirming that students rated themselves consistently higher than their supervisors on all four levels of competencies. The before mentioned literature suggests a significant difference between self and other ratings. In addition, there are optimal levels for competency for specific jobs, therefore higher average scores may not always translate into better performance. Therefore, a match between competency level and job task may be a more important indicator of performance than higher average scores.

Finally, although students rated themselves higher overall, the actual differences were consistent, but not academically significant (Wolf, 2006). This discrepancy indicates that, in general, the students did not have the same perception of themselves as their supervisor. Although students and supervisors were given the same general procedure, a speculation of this finding could be that students may rate themselves higher on emotional intelligence because their self-perception of their emotional intelligence is broader than the role of student and includes their perception of the multiple roles and contexts in their lives. While students may have a broad range of emotional intelligence skills, they may not express them fully during fieldwork because they feel a certain level of anxiety at being observed and graded based on clinical performance (Tan, Meredith & McKenna, 2003; Tickle-Degnen, 1997). Students are new to the clinical environment and may be self-focused and not able to use their emotional intelligence to help themselves perform better in other areas of the fieldwork experience. Perhaps the

expression of emotional intelligence is more available once students feel that they are being more effective with their performance as an occupational therapy student (James & Musselman, 2005). However, while completing the ECI, they may have focused on other broader aspects of themselves.

The results show that students scored generally higher on self-ratings than supervisor scores. Another interpretation may be that students do not have accurate assessment of their own entry level clinical skills while supervisors, in their experience and maturity have a more accurate ability to assess student skills. The use of self-perception scoring may not allow the person to tap into discrete levels of self-descriptions of emotional experiences that may be more accessible to external raters. Although the use of self-ratings may be valuable to provide developmental feedback, this finding confirms the literature that self-ratings may be inflated (Sala; 2002; Wolf, 2006). This finding further explains why student self-scores of the ECI had no relation at all to fieldwork scores.

Recommendations

The application of emotional intelligence as a valuable framework for the health professions was discussed. Despite the aforementioned link between health care and emotional intelligence, traditional medical and health science education have not placed a strong emphasis on interpersonal and communication skills (Carrothers, Gregory, & Gallagher, 2000; McCallin & Bamford, 2007; Wagner, Ginger, Grant, Gore, & Owens, 2002). If being able to identify and manage one's emotions is an essential component for success at work and in most areas of life, then it would follow that these are skills needed in health care, where practitioners interact with patients and clients in need of their

services and subsequently affected by the behaviors of their practitioners (Landy, 2005; Strickland, 2000; Van Roo, & Viswesvaran, 2004). Understanding the role of emotional intelligence in clinical performance is important to occupational therapy educators because it may play a significant role in how students will perform as future health practitioners. A more holistic approach that integrates developing emotional intelligence skills can help improve the impact and relevance of health care professionals in their future work roles (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993).

The students' overall ECI scores were significantly higher than their supervisor's scores of student ECI. Self-awareness, the first domain of competencies provides a road map toward making adjustments on the job, motivating oneself and others, and assessing others' feelings to lead and motivate others. With self-awareness, a health care practitioner is better prepared to manage his or her emotions and behaviors and better understand and relate to others and organizational systems in general (Cavallo & Brienza, 2002; Goleman, 2000). A student with good self-awareness would be comfortable talking about their limitations and strengths and be open to constructive criticism. However, the literature suggests that students who have difficulty with fieldwork often have difficulty seeing their mistakes and taking feedback. Being able to receive constructive feedback is identified as an important competency in the ECI and the fieldwork performance evaluation (Gutman et al., 1998; James & Musselman, 2005).

The students in this study all passed fieldwork, confirming the literature that students having difficulty with fieldwork often lack emotional intelligence skills (Gutman et al., 1998; Hertzberg, 1993; Tickle-Degnen, 1997). In a recent article by Fischer

(2006), the author identified the areas of performance difficulty at fieldwork were skills related to emotional intelligence. These entry-level competencies include collaboration, receiving feedback from supervisors, interpersonal skills, respect for diversity, consistent work behaviors, and time management skills, corresponding to the emotional intelligence competencies of openness to candid feedback, conscientiousness, collaboration, and leveraging diversity. This present study confirms that students who do well on fieldwork also possess competency in emotional intelligence. Future studies are needed to clarify the importance of emotional intelligence skills for a larger cohort and for students struggling with or failing fieldwork. Herzberg (1994) suggests that occupational therapy training curricula would benefit from incorporating classroom activities which incorporate active learning to develop the emotional intelligence competencies of adaptability, and flexibility (Herzberg, 1994).

Future studies might explore the relationship between self-awareness and successful performance in fieldwork. A person's ability to perceive, identify and manage emotions provides the basis for the kinds of social and emotional competencies important for success in the work, and the individual's potential for mastering certain competencies leads to either success or failure in life's roles (Boyatzis, 2008; Cherniss, 2002). If self-awareness provides a road map toward making adjustments on the job, then it would follow that future research to identify this as a possible link with success or potential failure in fieldwork may provide useful information. It may be interesting to investigate how failing students rate themselves on self-awareness. For example if failing students tend to overrate themselves on emotional intelligence, this could be problematic when dealing with patients and colleagues in the clinical arena. One task of future research

would be to determine predictors of emotional intelligence that would allow for early identification of students at risk of clinical difficulties so that appropriate supports can be implemented to assist them to reach their full clinical potential. These students could be counseled early in the academic program to help guide them successfully. The emotional intelligence literature suggests that these skills can be learned and has been associated with enhanced cognitive abilities (Boyatzis & Saatcioglu, 2008). Emotional intelligence training could have a potentially positive impact on occupational therapy student critical thinking and clinical reasoning skills in fieldwork. It is important for health practitioners to be able to accurately assess their assets and limitations and to work on them and not to consider themselves more capable than their actually are. Teaching clinicians how they may think about emotional intelligence and how it impacts fieldwork may be a valuable goal for future studies. Continued research on specific competencies related to clinical success may eventually provide a roadmap toward making adjustments at the academic training and clinical levels (Sala, 2002; Wolf, 2006).

The findings indicate a discrepancy between student and supervisor perceptions and scores of emotional intelligence. Future studies might include the use of multiple raters such as additional faculty members to give a clearer evaluation of the student and to mitigate the affects of the relationship between supervisor and student. The relationship between supervisor and student is essential in ensuring the training of successful entry level therapists into the profession of occupational therapy. Future research could be directed toward determining the effect of the supervisor and student relationship in fieldwork to see if this affects the use of the instruments. For example, do similar or complimentary interactions contribute to performance ratings?

A further recommendation would be to enhance communication between student and supervisor. The ECI is meant to be useful in providing feedback on the discrepancy between a person's self-perceptions and how they are perceived by others (Sala, 2002; Wolf, 2006). Students who either already possess good emotional intelligence skills or conversely, lack these skills, could be guided in their supervisory relationship to identify how these abilities can be applied at fieldwork. In this way, students would be able to integrate and express these skills as part of a broader role of themselves as a student. Most importantly, this would help create an agreement in the perceptions between student and supervisor and a better synchrony in assessing and determining the value of emotional intelligence in the clinical setting.

Conclusions

Emotional intelligence has been referred to as having a potential role in business education, medicine, nursing and other health care professions (Birks & Watt, 2007; Cadman & Brewer, 2001; Cherniss, 2002; Sala, 2002; Stratton, Elam, Murphy-Spencer, & Quinlivan, 2008). Research studies suggest that the ECI is able to predict effectiveness in managers and student performance and remains a potentially worthy construct for further research (Boyatzis et al., 1996; Goleman, 1998; Koman, 2007; Sala, 2002). Emotional intelligence may be useful as a predictor of performance specific to the health professions and may also have a positive impact on patients in health care settings (Birks & Watt, 2007). Some proponents are screening for emotional intelligence competencies during admissions to educational programs, to identify those who already possess skills and identify areas where additional skills require further development. Training programs that are designed to improve emotional intelligence skills show success,

supporting contentions that emotional intelligence can enhance the development of critical thinking abilities (Abraham, 2004; Boyatzis & Saatcioglu, 2008; Cavallo & Brienza, 2002; Jaeger, 2003).

The findings of this study indicated a small but significant relationship between emotional intelligence scores estimated by supervisors and clinical performance. This suggests small but positive implications and a foundation for defining emotional intelligence in terms of practical and discrete skills that can be learned and developed to enhance overall performance. On the other hand, students' self-assessment was not related to clinical performance suggesting that students aren't able to objectively evaluate themselves on both emotional intelligence and clinical performance which confirms the existing literature that self-ratings may not be reliable and valid (Wolf, 2006).

In order to bridge the gap in knowledge pertaining to the relationship between emotional intelligence and successful fieldwork performance, further research could be conducted regarding the characteristics of students who have difficulties in the clinical portion of the program (Best, 1994; Engelhart, 1957; Ford, 1979; Katz & Mosey, 1980; Mann & Banasiak, 1985; Lind, 1970). Such results could reveal valuable information that could be integrated into the curriculum to promote success in fieldwork performance and to prevent potential failures. Further research would provide knowledge of predictors that would allow for early identification of students at risk of clinical difficulties so that appropriate supports can be implemented to assist them to reach their full clinical potential (Akerjordet & Severinsson, 2007; Best, 1994; Birks & Watt, 2007; Sands, 1995; Swinehart & Meyers, 1993; Tan, Meredith & McKenna, 2004).

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Appendix A: Consent Form

NEW YORK INSTITUTE OF TECHNOLOGY RESEARCH CONSENT FORM

Title of Project: The Effect of Emotional Intelligence and Clinical Performance in an Occupational Therapy Training Program
Measurement: ECI-Emotional Competence Inventory by Boyatzis, and Goleman, D
Principal Investigator: Lisa Gordon-Handler, MA OTR/L

PURPOSE OF RESEARCH
The purpose of this study is to explore the relationship between occupational therapy students 'emotional intelligence and fieldwork scores. This study will add to the body of knowledge in occupational therapy literature in order to understand student success in a clinical setting.

PROCEDURE
You will be given the ECI (Emotional Intelligence Inventory) to answer questions on how you respond in different situations related to personal, professional, and social interactions. In addition, your on-site clinical fieldwork educator will complete the standard American Occupational Therapy Association Fieldwork Performance Evaluation Form as well as the ECI. The principal investigator will present the ECI questionnaire and answer any questions that you or the fieldwork educator may have. The ECI questionnaire should take no longer than 10 minutes to complete. This questionnaire is used for students to respond honestly and frankly on each of the 72 items listed. Upon completion, these forms will remain confidential and the principal investigator will have exclusive access to them. **By returning this form you give authorization to the raters to use this information in this research study.**

RISKS AND DISCOMFORT
There are no risks, repercussions, or physical discomfort associated with completing or refusing to complete this form.

BENEFITS
This research study has the potential to determine predictive elements needed to ensure success in the clinical setting. By requesting both the student and fieldwork educator to complete the questionnaire, this study will also determine what areas of change and enhancement in the occupational therapy curriculum can be made to increase success in the professional clinical setting.

CONFIDENTIALITY
When submitting your questionnaire, only the principal investigator will have access to fieldwork and ECI scores. This research information will remain completely confidential.

REQUEST FOR MORE INFORMATION
Understand that you can ask at any time, the process and procedures of this research study.

REFUSAL OR WITHDRAWAL OF PARTICIPATION
Understand that your participation is voluntary and that you can withdraw at any time without any consequences.

Signature: _____ Date: _____