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Emotional Intelligence In Certified Athletic Trainers

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EMOTIONAL INTELLIGENCE IN CERTIFIED ATHLETIC TRAINERS

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ABSTRACT

CONTEXT**:** Athletic trainers' duties include facilitating rehabilitation, preventing injuries, emergency preparation and situation management. Emotional intelligence (EI) is critical in management, specifically positive patient outcomes. High stress situations necessitates practitioners evaluate the emotions of others to seek the most efficacious outcome. To date, the impact of athletic trainer EI on effectively and safely performing responsibilities has not assessed.

OBJECTIVE: To describe the EI of certified athletic trainers as determined by the Self-Report EI Test (SREIT) (Cronbach's α=0.90).

DESIGN: Descriptive research study.

SETTING: Internet Survey.

PARTICIPANTS: We recruited 1000 certified athletic trainers working in a variety of settings across the United States. We had 73 respondents for a 7.3% response rate assuming all invitations were delivered.

INTERVENTION: We obtained approval from the Indiana State University IRB prior to study initiation. The NATA e-mailed potential participants a link to our survey and a request for completion.

MAIN OUTCOME MEASURES: The survey consisted of 38 questions, including 4 demographic questions (gender, age, level of education, and athletic training setting) and 1 open ended question requesting the participant to define EI. The SREIT constituted the majority of the

survey consisting of 33 5-point Likert scale questions regarding EI. We calculated the total scale (possible range: 33-165) and sub-scale scores for perception of emotion (possible range=10-50), managing individuals own emotions (possible range=9-45), managing others' emotions (possible range=8-40) and utilization of emotions (possible range=6-30).

RESULTS: Participants varied in gender, employment setting and age suggesting we identified a diverse population of respondents. We did not identify any significant differences (t_{71} =-0.698, p=0.487) between males (126.6±12.9) and females (128.9±14.0) on the SREIT total score (127.9±13.4). We did not observe any significant differences between age categories: 21-20y (129.4±12.8), 31-40y (125.5±13.7), 41-50y (125.3±15.7), 51-60y (129.44±13.4). We did not identify any significant differences between athletic trainers in the college/university (128.7±15.0), clinic (127.2±10.4), secondary school (126.4 ± 13.8) or various other settings (129.5±13.7). We did not identify any statistical differences among our comparison groups on the subscales: perception of emotion (38.3±5.9), managing individuals own emotions (36.3±4.2), managing others' emotions (30.8±4.0) and utilization of emotions (22.6±2.8).

CONCLUSIONS: Several studies have used the SREIT to measure EI in various populations (university students, parents, teaching interns, employees, managers, etc.). The athletic trainers in our investigation performed slightly higher than the average scores in the other 33 investigations (mean=126.1, range=117.5-142.5) and on-par with studies (n=8) only involving full-time adult employees or managers (mean=127.8, range=121.1-142.5). Both the males and females in this study performed higher than those noted in the literature (7 studies: males=120.7, females=126.2). Athletic trainers demonstrate comparable levels of EI, but do not demonstrate any significant differences among genders, ages, or employment settings.

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CHAPTER 1

INTRODUCTION

Health care providers are often in positions that require performance under stressful situations such as nurses, emergency medical technicians, emergency room physicians, and athletic trainers. Medical providers are required to work in emergency situations and therefore must be able to act under high stress calmly and efficiently. Athletic trainers in particular spend a portion of their duties facilitating rehabilitation and preventing injuries in conjunction with emergency preparation and emergency situation management.[1] Emotional intelligence is vital in these situations because practitioner control of their emotions is critical for effective job performance and positive patient outcomes. During high stress situations, it is also imperative to evaluate the emotions of others to seek the most efficacious outcome. The patient may become irrational, parents become intrusive, coaches may want to know the extent of the injury immediately and the practitioner needs to be able to interpret these emotions and adjust their responses accordingly. As of yet, the emotional intelligence of Athletic Trainers has not been studied but may have a critical impact on their ability to effectively and safely manage emergency situations and treat patients.

Emotional intelligence (EI) is a derivative of social intelligence which incorporates an individual's ability to control their emotions, as well as identify the emotions of others.[2] Five core areas are studied under the umbrella of EI: self-awareness, self-regulation, self-motivation,

empathy, and social skills. EI continues to gain popularity as the rationale for an individual's potential success and ability to cope with stressful situations.[3-9]

Two viewpoints exist regarding EI, the ability approach and the trait approach. Ability EI is intelligence based on emotional information.[10] Conversely, trait EI views EI as part of an individual's personality and something that cannot be changed.[10] Ability and trait EI are often referred to under the umbrella term EI.[11] A proposed three-level model of EI attempts to unify the trait and ability models by proposing to capture differences between individuals in to three categories.[12] The three categories include knowledge of the complexity of emotion and beliefs concerning emotions, the ability to apply that knowledge to problem solving situations, and the disposition or propensity to put the knowledge and ability into practice.[12] This model allows for the consolidation of both trait and ability EI by recognizing the EI component that we are born with along with the aptitude an individual has to increase their EI.

Research on EI occurs in various settings and often seeks to establish relationships between high EI and positive behaviors. Specifically researchers have observed a correlation between higher EI and positive traits including academic success,[13,14] optimism, prosocial behavior, impulse control, parental warmth, and positive peer and family relations.[6,15] Individuals with high EI present with more effective mood management[16], the ability to adapt to stress[17] and more proficient during social interactions.[18] In contrast, lower EI has been related to self-destructive behaviors including deviant behavior, drug taking, alcohol abuse, cigarette smoking, and poor relationships.[19,20] EI is recognized as an important skill when it comes to savvy interpersonal skills and the ability to work well and collaborate with others.[21] Researchers suggest that EI is vital for effective practice within the health care system, particularly concerning delivering patient-centered care.[22-28]

Athletic trainers as members of the health care profession must view the ability to manage and read emotions as an important skill.[29] The ability to manage and read emotions has the ability to improve patient-centered care, enhance the quality of the professional-patient relationship, and positively affect patients' satisfaction.[29] Due to the importance of EI in the health care profession, we will investigate EI in athletic trainers practicing in a variety of professional settings.

Research Question

What is the emotional intelligence of certified athletic trainers as determined by the self-report emotional intelligence test?

Legend of Abbreviations and Definitions

AT—Certified Athletic Trainer

NATA—National Athletic Training Association

Ability EI—Emotional Intelligence, the ability to perceive, utilize, understand and manage emotions in self and others.[2,6]

Trait EI—Emotional Intelligence, emotion-related dispositions including the way people attend to, identify, understand,, regulate and utilize their own emotions as well as the emotions of others[11,12,30]

Ability EI—"cognitive-emotional ability" measured via maximum-performance tests[11]

Trait EI—"emotional self-efficacy" measured via self-report questionnaires[11]

Expected Outcomes

The proposed study is an observational descriptive study and therefore, hypotheses are not appropriate. At the conclusion of this research study, we expect to draw conclusions about

the EI characteristics of certified athletic trainers. As a result, we describe the average EI level of certified athletic trainers working in a variety of settings.

CHAPTER 2

REVIEW OF LITERATURE

Emotional intelligence (EI) is defined as the ability to identify emotions in self as well as others.[31] As health care providers, the need for self and social awareness is essential for positive patient outcomes. In the following literature review, I will discuss EI, how it relates to gender, maturity, experience and professional performance, and EI characteristics common among health care providers.

Search Strategy

The CINAHL, Cochrane, PubMed and PubMed central databases were employed to find peer reviewed literature on EI. The researchers used the following key words: emotional intelligence, mindfulness, social competence, medicine, athletic trainer, health care professional.

Emotional Intelligence

EI has been defined as a part of social intelligence which incorporates an individual's ability to control their emotions as well as other individuals' emotions.[2] In order to accomplish control of emotions, the individual must first be able to distinguish between emotions. Once the emotions are observed by the individual there must be an integration of that information into their thoughts and actions.[2] In this study, we will be looking at EI from the perspective of trait EI. Trait EI is emotional self-efficacy which consists of emotion-related traits and the abilities an individual perceives that they possess.[11] Research has found that a high trait EI score

corresponds to temperaments commonly known to have a greater ability to adapt to demanding situations.[12]

Core Areas of Emotional Intelligence

The five core areas of EI attempt to encapsulate all aspects of interpreting emotions; self-awareness, self-regulation, self-motivation, empathy, and social skills. The first three core areas, self-awareness, self-regulation and self-motivation, relate to an individual's ability to recognize and moderate his or her own emotions as well as use their emotions as motivation. Self-awareness is the fundamental concept described as the ability to understand emotions, strengths, weaknesses, needs and drives.[32] An individual who scores high in EI in regard to self-awareness will be better equipped to recognize their own emotions. On the other hand, an individual who lacks this category of EI will struggle with knowing how to react when others express emotions.

The second core area, self-regulation has some similarities to self-awareness. Self-regulation is an individual's tendency toward self-reflection, the ability to adjust to new circumstances, and choosing to say no when tempted to be impulsive. [32] Theoretically self-regulation is a preemptive process where an individual is able to organize and manage their thoughts, emotions, behaviors, and environment.[33] Self-regulation is a process that from a trait EI perspective an individual is born with and has this tendency in their psychological core. The process of self-regulation can be in relation to a variety of activities from emotions and social interactions to academic goals. From an academic perspective self-regulation can be accomplished by setting goals, choosing and applying strategies, monitoring performance and reflecting on the outcomes over a period of time.[34] In regard to EI self-regulation enables an individual to live with a clearly defined purpose and an awareness of the individuals own abilities.

Self-motivation is the desire to pursue dreams and relishing in the potential challenges that may be faced to accomplish goals and desires.[32] Included in self-motivation is setting self-rewards and creating a supportive work environment.[34] Assessment of individual motivation involves evaluating belief in their capabilities, as well as how much they value given tasks[33] Part of self-motivation is also learning how to manage distractions and developing time management skills. Included in self-motivation is also the idea that you ultimately control your own happiness or contentment with the job that you accomplish. Therefore, an individual with a high level of EI will not allow their surroundings or other individuals to control their emotions resulting in a more emotionally stable and reliable individual.

The final two core areas, empathy and social skills, incorporate how an individual interacts with others. Empathy is defined as thinking of others before acting.[32] Empathy has been divided into two categories: cognitive empathy and affective empathy. Cognitive empathy is the rational ability of an individual to distinguish and categorize another's feelings.[35] Affective empathy differs in that included after identifying others emotions there is an emotional response to the situation.[35] When experiencing empathy for another individual two types of responses exist: personal distress or empathic concern. Personal distress occurs when a negative emotion is experienced as a result of witnessing another individual's distress or tragedy.[36-38] Furthermore, it includes an inward focus on how that situation makes the individual feel rather than focusing on the individual in distress. Empathic concern on the other hand is focused on the other individual and the concern felt for them. These two views of empathy can be combined resulting in an individual who is able to recognize others feelings as well as feel for their struggles. When relating this ability to EI an individual who scores high in this area will think of others and their

problems in a way that enables the individual to assist in the situation as well as potentially move forward to prevent such situations in the future.

The last area evaluated in EI is social skills which can include the ability to communicate effectively both vocally and through body language as well as self-control.[32,39] Social skills are large scope and thus definitions are ambiguous. Social skills Included in social skills is also a component of being able to effectively present ideas, analyze and solve problems, take initiative, plan and organize and work together as a team.[40] Ultimately, an individual who has well developed social skills in regard to EI will bring various personalities into a harmonious working environment because they are aware of all facets of emotion being expressed by the group.

Measuring Emotional Intelligence

Emotional intelligence measures range from self-report personality-based approaches to ability-based assessment measures.[3] The Bar-ON Emotional Quotient Inventory (EQ-i), Multifactor Emotional Intelligence Scale (MEIS), Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Report EI Test (SREIT) are only four of the many instruments used to measure EI.

Bar-On Emotional Quotient Inventory (EQ-i)

The EQ-I is a 133 item self-report measure designed to measure five factors: intrapersonal EI, interpersonal EI, adaptability, stress management and general mood.[19] Reports for the EQ-I tool consist of a combination of graphical representations and descriptions given on the basis of a 50-150 point scale. Scores are reported for overall EI as well as each of the five factors. Adequate test-retest reliability for the EQ-I has been demonstrated ($r=.73$).[19] Reported reliability has a slight variation across ten studies from $\alpha= .69$ to $.86$.[19]

Mayer-Salovey-Caruso Emotional Intelligence Test (MEIS and MSCEIT V.2)

The MEIS and MSCEIT are 141 item state based tests designed to measure four abilities. Reports for the MEIS and MSCEIT tests are a combination of graphical representations and descriptions given on a 50-150 point scale for overall EI as well as each of the four abilities. Each of these abilities is measured in a different way: the ability to perceive emotion is measured by rating how much an emotion is expressed in a picture of a face, design or landscape and the ability to integrate emotion to facilitate thought is measured by describing emotional sensations and how they correspond to sensory modalities.[19] The ability to understand emotion is observed by looking at how individuals blend emotions and how their reactions change with time and lastly, the ability to regulate emotions to promote personal growth is measured by having individuals choose how they manage their own emotions and others' emotions in a hypothetical situation.[19] High test-retest reliability has been reported ($r(59) = .86$, $p<0.001$) and the reliability coefficient has been reported as $r=.91$.[19,41]

Self-Report EI Test (SREIT)

The SREIT is also referred to as the Assessing Emotions Scale, Emotional Intelligence Scale, or the Schutte Emotional Intelligence Scale.[41] The SREIT is the shortest of the tools used to measure EI at 33 questions. The SREIT is based on Schutte's understanding of Salovey and Mayer's model of EI and assesses trait EI.[5,41] Responses are given on a five point likert scale including strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree and strongly agree.[41] The total scale score is calculated by reverse coding items 5, 28 and 33 and then calculating a score between 33 to165.[41] (See Appendix B for complete list of included questions) Test results are divided into four categories: perception of emotion (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33), managing individuals own emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31),

managing others' emotions (items 1, 4, 11, 13, 16, 24, 26, 30) and utilization of emotions (items 6, 7, 8, 17, 20, 27).[5,19,41] The initial internal consistency is reported as α =.90 based on the development sample of 346 participants.[41] [5,19] Internal consistency ranges from α =.76 to α =.95across 27 studies resulting in a mean of α=.87.[41] Reliability of this tool has been reported as α=.93 with test-retest reliability (r=.78).[5] Research also shows a strong relationship between EI scores on the SREIT and EI scores on the EQ-I (r = .43) and a weak relationship with the MSCEIT (r = .18).[19,41]

Gender and Emotional Intelligence

Gender is a debated component of EI. Studies assessing the component of gender have conflicting conclusions. In one study performed on senior medical students in Australia men scored higher on the MSCEIT than women.[7] However, studies have also concluded that women tend to score higher on the MSCEIT.[19,42] The dichotomous relationship between scores in males vs. females has also been observed when using the SREIT tool.[5,19] On the other hand, no significant differences have been observed between genders when using the Bar-On EQ-I.[19] When the gender aspect is specifically targeted in the overall data, women have been observed to score higher on questions related to managing job related stress.[11] Although variation is observed when analyzing the effect of gender on EI, this is an interesting component to consider when analyzing the results of this study.

Maturity and Experience Related to Emotional Intelligence

As an individual matures according to the three level model of EI, their EI will also grow as they learn to identify and deal with emotions as well as incorporate those abilities into action. Adults perform at a higher ability level than adolescents in regard to EI.[6] However, in certain situations research has indicates a decline in EI over time. When comparing scores from the first

year orientation of medical students and the scores they received after the completion of their third year of clinical training a small but significant decline in scores was observed in regard to attention to feelings, mood repair and empathy.[43] The decline in scores could be due to a mental hardiness aspect that students adopt when they become focused on their education, as well as more clinically adept at handling personal relationships with patients. Hardiness could also explain why male empathy scores increase between the first and second years of medical training, while female scores tend to decrease.[4]

Emotional Intelligence and Professional Performance

Workplace Stress

Health professionals incur a significant amount of stress experienced due dealing with the physical and emotional problems of ill and injured patients, running effective teams, dealing with management structures, and the conflicting time demands at all hours of the day.[44] High EI has been associated with low levels of stress as well as significantly lower depression symptom levels and greater job control.[9,11,45] The development of EI skills such as empathy and impulse control may aid individuals in effectively managing their emotions.[45]

Patient-Centered Care

Patient-centered care includes the idea that the professional must understand the patients' need for information, view the patient as an individual and ultimately promote an effective patient-professional relationship.[29] A limited relationship has been observed between physicians' EI scores and patient satisfaction with the majority of emphasis from patient responses on physician "happiness".[46]

Professional Characteristics of Health Care Professionals

Emergency Medical Technicians (EMT)

According to the United States Department of Labor, statistics there are approximately 221,760 EMT's and paramedics employed in the United States. Of these individuals the average length of employment is reported to be 11 years, ranging from 0-23 years in length.[47] As years of employment increase EMTs are more likely to describe work related stress and psychological distress.[47] In order to combat this increasing amount of stress the initiation of group support and positive behavior from the supervisor can have a positive effect on stress.[47]

Athletic Trainers

Approximately 16,290 athletic trainers work in the United States as of spring 2012. In order to become a certified athletic trainer an individual must complete a professional practice program of study at an institution accredited by the commission on Accreditation of Athletic Training Education (CAATE) as well as pass an examination administered by the Board of Certification (BOC).[48] Additional credentials such as licensure or registration are required depending on the state in which an athletic trainer practices. While these requirements are intended to allow only proficient athletic trainers to practice, they do not assess or evaluate affective and personal qualifications that affect the athletic trainers' ability to perform job duties. Examining what characteristics athletes identify as important in their athletic trainer research suggests five key constructs: care, communication, commitment, integrity, and knowledge.[48] A majority of these characteristics fall into categories outlined as EI. Therefore, from a superficial perspective it can be concluded that higher EI will result in greater athlete satisfaction.

Athletic trainers work in a wide variety of settings including high schools, colleges and universities, professional sports, clinics, hospitals, the military or law enforcement, industrial or

corporate and many others. Each of these settings has a unique set of challenges. The NATA has established five domains under which athletic trainers practice. These domains include injury/illness prevention and wellness protection, clinical evaluation and diagnosis, immediate and emergency care, treatment and rehabilitation, and organizational and professional health and well-being. In the high school setting responsibilities include providing athletic training services, covering all home athletic contests and away football games, acting as a liaison between all parties necessary for the care of the athlete, maintaining proper documentation, providing coaches with a list of athletes who are medically eligible and assisting the athletic director as requested.[49] Athletic trainers working in a collegiate setting where faculty responsibilities are included in the job description often have to juggle teaching, research, athletic training services, and administration responsibilities. Athletic trainers without these extra responsibilities also end up at the disposal of the head coach, cover practices, games, and travel as well as prevention, rehabilitation and administrative duties. A clinical or hospital setting offers more structured hours where the majority of responsibilities include outpatient-ambulatory-rehabilitation, the ordering of further medical tests, brace fitting, and history taking.[50] Athletic trainers cannot enlist directly into the military; however, they can work as a civilian with a government contract. Specific opportunities include working with Army morale, welfare and recreation sports as well as during training at base camps. The industrial and corporate settings are unique in that the goals of an athletic trainer include minimizing workers compensation costs, adjusting work to fit the capability of the worker, and promoting total body fitness.[51]

EI is essential for an athletic trainer whose daily interactions with athletes or patients and emergency management skills often create a high stress environment. The two major demands of the athletic training profession are hours, travel, expectations, and the influences of coaches.[52]

These demands often create work-family conflict. Athletic trainers experience the same level of work-family conflict regardless of demographic factors such as gender or presence of children.[53] However, athletic trainers have a lower burn out rate than other health care providers.[54] A component of this low burn out rate could be a potentially high level of EI across the population of athletic trainers. If a high level of EI exists compared to other population norms, this could explain in part the low burn out rate in athletic trainers compared to other healthcare providers.

Athletic trainers face the challenge of excessive work hours (>50 hours) in a traditional athletic setting.[55] A competitive sports environment brings a unique dynamic due to the pressure from coaches to return athletes to play as quickly as possible as well as keep athletes performing at a high level.[56,57] As such, athletic trainers incur significant internal and external stress in the workplace.

Conclusion

The expanse of EI literature in understanding healthcare providers explains that high EI has been associated with low levels of stress as well as significantly lower depression symptom levels and greater job control.[9,11,45] However, athletic trainers fall into the category of health care professionals that are unique in their job duties and work environment. However, further research pertaining to athletic trainers' EI may provide insight into the individuals who choose to pursue the career of athletic training.

CHAPTER 3

METHODS

Study Design

We employed a descriptive research design to observe the emotional intelligence (EI) of certified athletic trainers through the utilization of the Self-Report EI Test (SREIT).

Participants

After obtaining approval from the Indiana State University Institutional Review Board, we distributed 1,000 e-mails through the National Athletic Trainers' Association (NATA) membership directory, which is accessible upon request from the NATA, aiming for a 40-60% response rate. All participants are members in good standing of the NATA, over the age of 18, and college graduates (hold the certification credential). Male and female participants working in a variety of settings were included.

Instrument

Self-Report EI Test (SREIT)

The SREIT is the shortest of the tools used to measure EI at 33 questions. The SREIT is based on Schutte's.[5,41] understanding of Salovey and Mayer's model of EI and assesses trait EI Responses were given on a five point likert scale including strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree and strongly agree.[41] The total scale score is calculated by reverse coding items 5, 28 and 33 and then calculating a score between 33 to165.[41] (See Appendix B for complete list of included questions) Test results were divided into

four categories: perception of emotion (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33), managing individuals own emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31), managing others' emotions (items 1, 4, 11, 13, 16, 24, 26, 30) and utilization of emotions (items 6, 7, 8, 17, 20, 27).[5,19,41] The initial internal consistency is reported as α =.90 based on the development sample of 346 a mean of α=.87.[41] Reliability of this tool has been reported as α=.93 with test-retest reliability (r=.78).[5] Research also shows a strong relationship between EI scores on the SREIT and EI scores on the EQ-I (r = .43) and a weak relationship with the MSCEIT (r = .18).[19,41]

Procedures

We emailed potential participants a request to participate in our study with an included link to the instrument. On October 22, 2012, we emailed the participation request. When participants clicked on the link to participate in the EI survey, they implied their consent.

Data Analysis

We retrieved the raw scores and EI scores from Qualtrics, exported the data to SPSS 18.0 and analyzed the results. Because we had a heterogeneous sample, we analyzed the results using inferential statistics to compare EI between genders (t-test), employment settings (one-way ANOVA), and age categories (one-way ANOVA).

CHAPTER 4

MANUSCRIPT

Emotional Intelligence in Certified Athletic Trainers

Introduction

Emotional intelligence (EI) is a derivative of social intelligence which incorporates an individual's ability to control their emotions, as well as identify the emotions of others.[2] Five core areas are studied under the umbrella of EI: self-awareness, self-regulation, self-motivation, empathy, and social skills.

Two viewpoints exist regarding EI, the ability approach and the trait approach. Ability EI is intelligence based on emotional information.[10] Conversely, trait EI views EI as part of an individual's personality and something that cannot be changed.[10] Ability and trait EI are often referred to under the umbrella term EI.[11]

Emergency medical care often requires that medical providers render services in stressful situations.[47,58,59] The ability to manage emotional responses to stressful situations is critical to appropriate and effective health care. Athletic trainers(ATs) in particular facilitate stressful medical situations, such as rehabilitation and preventing injuries in conjunction with emergency preparation and emergency situation management.[1] EI is vital in patient care because practitioner control of self-emotions and the emotions of others are critical for effective job performance and positive patient outcomes. Patients may become irrational, parents become intrusive, coaches want to know the extent of the injury immediately and the practitioner must interpret these

emotions and adjust responses accordingly. As of yet, the EI of ATs has not been published, but may have a critical impact on a practitioner's ability to effectively and safely manage emergencies and treat patients. The purpose of this study was to investigate emotional intelligence in ATs to determine if a variance exists between gender, employment setting, and age category.

Methods

Study Design

We employed a descriptive research design to observe the EI of certified ATs through the utilization of the Self-Report EI Test (SREIT).

Participants

We obtained approval from the Indiana State University Institutional Review Board and distributed 1,000 e-mails through the National Athletic Trainers' Association (NATA) membership directory, which is accessible upon request from the NATA. All participants were members in good standing of the NATA, over the age of 18, college graduates, and certified ATs. Male and female participants working in a variety of employment settings as classified by the NATA membership were included.

Instrument

When the Self-Report EI Test (SREIT) was initially created it had an internal consistency reported as $\alpha = .90$ based on the development sample of 346 participants.[41 5,19] The internal consistency ranges from $\alpha = .76$ to $\alpha = .95$ across 27 studies resulting in a mean of $\alpha = .87$.[41] Reliability of this tool has been reported as $\alpha = .93$ with test-retest reliability $r = .78$.[5] When looking at the instruments used to measure EI one of the most reliable and the shortest tool is the SREIT at 33 questions..[5,41] Responses are provided on a five point likert scale including 1=

strongly disagree, 2= somewhat disagree, 3= neither agree nor disagree, 4= somewhat agree and 5= strongly agree.[41] A total scale score is calculated based on Likert responses by reverse coding items 5, 28 and 33 and then calculating a score between 33 to165 with a higher score indicating higher levels of emotional intelligence.[41] Test results are divided into four categories: perception of emotion (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33), managing individuals own emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31), managing others' emotions (items 1, 4, 11, 13, 16, 24, 26, 30) and utilization of emotions (items 6, 7, 8, 17, 20, 27).[5,19,41]

Procedures

We emailed ATs with the request to participate that included a link to the instrument. The email request was emailed in October, which we perceived as an ideal time to collect data, since it is after summer vacations and before holidays therefore potentially maximizing the number of individuals available to take the survey. Participants who clicked on the link to participate in the EI questionnaire implied their consent. The survey was confidential, as we did not collect any identifiable information including IP addresses, emails or place of employment, through the survey link. We analyzed the results using inferential statistics to compare EI between genders (t-test) and job settings (one-way ANOVA). The other component of our survey was an open-ended question regarding the participants' knowledge of EI.

Results

The participants in our study varied in gender, employment setting, age, and level of education, which suggest we identified a diverse population of respondents (see Table 1). Of the 73 ATs who participated in the study there were 33 males (45.2%) and 40 females (54.8%). When looking at the age of our participants we divided them into four categories 21-30 years of age (n=35), 31-40 years of age (n=17), 41-50 years of age (n=12) and 51-60 (n=9). The

educational level of our participants included BS/BA (n=14), master's (n=57), and doctoral degrees (n=2). The final demographic we observed was employment setting, college/university clinical setting (n=18), college/university faculty setting (n=4), college/university split clinical and faculty setting (n=5), secondary school (n=21), clinical with outreach responsibilities (n=11), clinical without outreach responsibilities (n=3), and other (n=11).

We did not identify any significant differences (t_{71} =-0.698, p=0.487) between males (126.6±12.9) and females (128.9±14.0) on the SREIT total score (127.9±13.4). Additionally, we did not observe significant differences (p=0.682) between age categories: 21-20 years of age (129.4±12.8), 31-40 years of age (125.5±13.7), 41-50 years of age (125.3±15.7), and 51-60 years of age (129.44±13.4). We did not identify any significant differences (p=0.914) between ATs in the college/university (128.7±15.0), clinic (127.2±10.4), secondary school (126.4 ± 13.8) or various other settings (129.5±13.7). Lastly, we did not identify any statistical differences among our comparison groups on the subscales: perception of emotion (38.3±5.9), managing individuals own emotions (36.3±4.2), managing others' emotions (30.8±4.0) and utilization of emotions (22.6±2.8).

Several studies have used the SREIT to measure EI in various populations (university students, parents, teaching interns, employees, managers, etc.). The ATs in our investigation performed slightly higher than the average scores in 33 other investigations (mean=126.1, range=117.5-142.5)[19,60-70] and on-par with studies (n=8) assessing full-time adult employees or managers (mean=127.8, range=121.1-142.5).[15,41,65,71-75] Both the males and females in this study performed higher than those noted in the literature (7 studies: males=120.7, females=126.2).[5,41,62,63,67,68,76,77]

As a part of this study, we requested the participants define EI. Sixty-one percent (n=58) provided a range of definitions. Common themes throughout these definitions include the integration of emotion in response to the surrounding situation, the ability to control emotions and make correct decisions under stressful situations, and the combination of intellectual capabilities and emotional maturity. Respondent statements included:

"The ability to perceive emotions in the self and others, facilitate thoughts from these perceptions, understand emotion and manage emotion in self and others."

"The state of mind on how you react to a situation and how well you handle it to its completion."

"Being able to think rationally and clearly in certain stressful situations by maintaining control of emotional responses."

From comprehensive definitions to three word answers, the depth of the definitions given by the respondents indicates a wide variety of EI understanding among ATs.

Discussion

EI and High Stress Occupations

Higher EI and positive traits including optimism, prosocial behavior, impulse control, parental warmth, and positive peer and family relations,[6,15] may be more common in service professionals like healthcare. In contrast lower EI has been related to self-destructive behaviors including deviant behavior and cigarette smoking.[19] These behaviors tend to be less common in the health fields, as they often require advanced training and education.

EI may be used to describe two distinct theories: ability and trait EI. Ability EI is intelligence based on emotional information.[10] Conversely, trait EI views EI as part of an individual's personality and something that cannot be changed.[10] A proposed three-level model

of EI attempts to unify the trait and ability models by attempting to capture differences within people.[12] The three categories include knowledge of the complexity of emotion and beliefs concerning emotions, the ability to apply that knowledge to problem solving situations, and the disposition or propensity to put the knowledge and ability into practice.[12] This model allows for the consolidation of both trait and ability EI by recognizing the EI component that we are born with along with the aptitude an individual has to increase their EI. There is an aspect of trait EI that is ingrained into our personality but it is up to the individual to utilize that skill. The decision the individual must make is based on disposition to use or not to use EI. One could theorize that an assessment of self-selection and advancement in healthcare based on practitioner EI may assist with future recruitment, retention and overall patient care. However, a determination of EI within and among health care professions must occur.

When looking at allied health professionals in general, it has been concluded that participants with higher EI respond better to trauma and have decreased post-traumatic stress symptoms.[9] Researchers have used this as evidence for using EI to select individuals for stressful jobs such as those in armed forces or emergency services.[9] A proposed use of EI from this perspective is to use EI to identify at risk individuals who are required to deal with traumatic situations and taking steps to help these individuals deal with the additional stress rather than eliminating them from those jobs.[9]

Some available literature among medical students provides a unique glimpse into EI observed over time. The ability to act, talk, listen, or simply tolerate a patient's distress, it is viewed as an important developmental step related to EI in medical training .[43] One of the potentially confounding factors in regard to trait EI is that research has shown as medical students progress through school and as many as 75% become more cynical towards academic

life and the medical profession leading to a decline in empathy.[78] As such, it appears that potential recruitment or self-selection into these high stress professions may change EI over time suggesting that ability EI is a malleable characteristic.

EI and Improved Patient Outcomes

EI regarding doctor-patient relationships, patient satisfaction and patient outcomes is wanting, but preliminary findings suggest higher EI results in more benefits. One study concluded that patients are more trusting of physicians with high EI.[79] Individuals with higher EI have been shown to have better communication skills, which has been linked with fewer malpractice lawsuits.[80] Patient satisfaction has been correlated with the medical professional's ability to recognize and respond to both verbal and nonverbal communication and emotional information.[81,82] These findings, although limited, suggest that higher EI can result in better patient outcomes including less medical errors and more positive patient experiences.

EI is important throughout the hierarchy of medical care. Effectiveness in nursing leadership has been clearly associated with EI.[83] There is also a significant correlation in nurses between EI and clinical performance.[83] Nurses are required to draw on skills related to EI to meet the needs of patients as well as work and negotiate with multidisciplinary teams.[84] One study looked at nursing leadership related to patient outcomes. The researchers identified that high-resonant leadership styles or high EI leaders demonstrated 26% lower odds of mortality when compared to lower EI leaders.[85]

EI in ATs

The subcategory scores from the ATs in our study can be divided into three categories. The first category is the managing own emotions scale. The average response for questions in this subcategory was 4.03 out of 5 which means that the majority of ATs somewhat agreed with

the statements regarding their ability to manage their own emotions. Social skills can be used to categorize the middle category of EI scores, which includes perception of emotion and managing others' emotions. The subcategory responses were 3.84 out of 5 on average which indicates that the ATs fell closer to the somewhat agree response compared to neither agree nor disagree. The final subcategory was the utilization of emotions, where ATs scored on average 3.77 out of 5 which falls closer to neither agree nor disagree on the Likert scale.

ATs scored highest on the managing their own emotions scale, which could indicate that they excel in controlling their own emotions.[2,6,15,45] Self-awareness and self-regulation enables the individual to adjust to new circumstances.[32-34] Self-awareness can be described as understanding one's own emotions, strengths, weaknesses, needs and drives.[21] Examples of applying self-awareness in a healthcare setting include, decision making when budgets must be cut, knowing your values do not line up with the health care system, and being aware that your job affects your family relations.[21] From a nursing perspective, self-awareness is vital in retention. In a study, looking at EI subcategories in nursing one advanced practice nurse states that, "The knowledge that I have gained from nursing is that it is a blend… Although the days are long and hard, although the world of medicine and nursing seems to be spiraling downward out of control, I will not give up on nursing."[86] This description could easily be used to describe AT. Self-regulation is described as the tendency for reflection, adaptability, and refraining from impulsive decisions.[21] Within healthcare, self-regulation is knowing when an argument is not productive, actively pursuing issues rather than ignoring them, and accepting responsibility.[21] As a result we can theorize that in AT, a high EI on the self-regulation subscale may illustrate an essential characteristic of AT's to cope with stressful situations, control emotions to benefit patient outcomes, and recognize their strengths, limitations and self-worth.

The social skills category (perception of emotion and managing others' emotions subscales) falls just below the managing own emotions scale. Social skills can be described as having the ability to move people in the direction of your plan.[21] The application of social skills within healthcare can be seen in successful negotiation of contracts, employee satisfaction with performance evaluations, and good listening skills when communicating.[21] A high EI can affect inter-personal relationships in the workplace by creating a harmonious working environment.[21,71,87] The ability to understand how others express emotions are essential in sports and the health care setting, because it is beneficial when dealing with injured athletes and helping them return to play.

The lowest scores among ATs occurred on the utilization of emotions scale. A component of this subscale includes empathy or considering other's feelings before acting.[21] Examples of this in healthcare include, thinking of the family's perspective when dealing with controversial or sensitive subjects, compassion when employees have personal problems potentially affecting their job, and patient centered care.[21] Medical students are taught clinical judgment can be clouded by excessive empathy for patients but that controlling their own emotions and paying attention to the patients emotions can be accomplished through moderate concern.[88] While the ATs in our study scored moderately on this subscale, there is a potential that this decreased score is due to an AT's "disregard" for emotions as described in the education of medical students when managing emergent and stressful situations and athletes who are in a highly emotional state.

The diverse population of respondents represents a wide variety of athletic trainers concerning age and setting (see Table 1). Due to this distribution, we are able to generalize the results we received from our study to the AT workforce. The results of our comparisons between

sub-categories among our participants did not identify any significant differences between EI scores. The overall assessment that ATs have high EI scores can therefore be amalgamated in a general disposition and compared across health care disciplines.

The lack of difference in EI scores between gender, setting and age may imply that the type of individuals who pursue or complete education in AT have a higher level of EI than the average adult and on-par with studies involving managers.

Conclusion

Overall, ATs demonstrate similar levels of EI, with no significant differences among genders, ages, or employment settings. The general high EI score among ATs may indicate that individuals who graduate as ATs have similar characteristics. ATs score similarly to other medical professionals in regard to EI which could indicate a better ability to cope with stressful situations and higher levels of patient satisfaction.[9] This high level of EI is essential for ATs to function and provide the best patient care possible. ATs with lower levels of EI are at a higher risk for post-traumatic stress, mistrust in the clinician-patient relationship, and decreased patient satisfaction.[9] This could negatively affect patient outcomes. Trust and positive patient outcomes have been correlated with high EI in doctors and nurses when considering this it is natural to assume that high EI would also produce similar results in AT.[79,85] Knowledge of this characteristic can advance future evaluation of patient outcomes as well as potential assessment of characteristics of pre-AT students, retention and job satisfaction.

Table 1. Demographics

Characteristics	Frequency	Percentage
Gender		
Male	33	45.2
Female	40	54.8
Age (yrs)		
21-30	35	47.9
31-40	17	23.3
41-50	12	16.4
51-60	9	12.3
Education Level		
BS/BA degree	14	19.2
Master's degree	57	78.1
Doctoral degree	2	2.7
Athletic Training setting		
College/University (Clinical)	18	24.7
College/University (Faculty)	4	5.5
College/University (Split clinical/faculty)	5	6.8
Secondary School	21	28.8
Clinical with outreach responsibilities	11	15.1
Clinical without outreach responsibilities	3	4.1
Other	11	15.1

Table 2. EI Scores

EI Scale	Mean
Perception of emotion	38.25 ± 5.885
Managing individuals own emotions	36.29 ± 4.152
Managing others' emotions	30.75 ± 3.954
Utilization of emotions	22.56 ± 2.809
Global score	127.85 ± 13.437

Note: $n = 73$

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APPENDIX A: STUDY PARAMETERS

Operational Definitions

AT—Certified Athletic Trainer

NATA—National Athletic Training Association

EI—Emotional Intelligence, the ability to perceive, utilize, understand and manage emotions in self and others.[2,6]

Ability EI—"cognitive-emotional ability" measured via maximum-performance tests[11]

Trait EI—"emotional self-efficacy" measured via self-report questionnaires[11]

Assumptions

In regard to subject selection, the assumption is that an acquired random sample of ATC names from the NATA membership will result in a normal distribution of potential participants.

We also assume that participants will answer honestly and in a timely manner.

Delimitations

The delimitations for this study include that participants must be certified athletic trainers and members of the NATA.

Limitations

The NATA provides a random sample of participants, but those that self-select into participating will likely skew the random representation of the NATA membership. We will not be able to control for randomness for job setting and level of education, which may affect the analysis.

We hope for a 40-60% response rate among the 1,000 athletic trainers sampled; however, this represents a small portion of the national membership at large.

At the conclusion of our study, the sample size was 73 respondents. This is a limitation to our study because we do not have a number that is representative of the entire population even though our participants spanned all age groups, athletic training settings, and gender. Our participants also self-selected their participation therefore there is a possibility that those who chose to participate are those more interested in EI compared to the general population of athletic trainers.

APPENDIX B: THE ASSESSING EMOTIONS SCALE

The Assessing Emotions Scale[41]

Directions: Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the "1" if you strongly disagree that this is like you, the "2" if you somewhat disagree that this is like you, "3" if you neither agree nor disagree that this is like you, the "4" if you somewhat agree that this is like you, and the "5" if you strongly agree that this is like you.

There are no right or wrong answers. Please give the response that best describes you.

1=strongly disagree

2= somewhat disagree

3=neither agree nor disagree

4=somewhat agree

5=strongly agree

1.	I know when to speak about my personal problems to others.	1 2 3 4 5
2.	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	1 2 3 4 5
3.	I expect that I will do well on most things I try.	1 2 3 4 5
4.	Other people find it easy to confide in me.	1 2 3 4 5

5.	I find it hard to understand the non-verbal messages of other people.	1	2	3	4	5
6.	Some of the major events of my life have led me to re-evaluate what is important and not important.	1	2	3	4	5
7.	When my mood changes, I see new possibilities.	1	2	3	4	5
8.	Emotions are one of the things that make my life worth living.	1	2	3	4	5
9.	I am aware of my emotions as I experience them.	1	2	3	4	5
10.	I expect good things to happen.	1	2	3	4	5
11.	I like to share my emotions with others.	1	2	3	4	5
12.	When I experience a positive emotion, I know how to make it last.	1	2	3	4	5
13.	I arrange events others enjoy.	1	2	3	4	5
14.	I seek out activities that make me happy.	1	2	3	4	5
15.	I am aware of the non-verbal messages I send to others.	1	2	3	4	5
16.	I present myself in a way that makes a good impression on others.	1	2	3	4	5
17.	When I am in a positive mood, solving problems is easy for me.	1	2	3	4	5
18.	By looking at their facial expressions, I recognize the emotions people are experiencing.	1	2	3	4	5
19.	I know why my emotions change.	1	2	3	4	5
20.	When I am in a positive mood, I am able to come up with new ideas.	1	2	3	4	5
21.	I have control over my emotions.	1	2	3	4	5
22.	I easily recognize my emotions as I experience them.	1	2	3	4	5

23.	I motivate myself by imagining a good outcome to tasks I take on.	1	2	3	4	5
24.	I compliment others when they have done something well.	1	2	3	4	5
25.	I am aware of the non-verbal messages other people send.	1	2	3	4	5
26.	When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself.	1	2	3	4	5
27.	When I feel a change in emotions, I tend to come up with new ideas.	1	2	3	4	5
28.	When I am faced with a challenge, I give up because I believe I will fail.	1	2	3	4	5
29.	I know what other people are feeling just by looking at them.	1	2	3	4	5
30.	I help other people feel better when they are down.	1	2	3	4	5
31.	I use good moods to help myself keep trying in the face of obstacles.	1	2	3	4	5
32.	I can tell how people are feeling by listening to the tone of their voice.	1	2	3	4	5
33.	It is difficult for me to understand why people feel the way they do.	1	2	3	4	5

APPENDIX C: RAW DATA

Gender	Age	Age Category	Education Level	Work Setting	Work Setting (Consolidated)	Managing others' emotions	Managing own emotions	Utilization of emotions	Perception of emotion	Total EI
Female	26	21-30	MA/MS	Clinical (with outreach)	Clinical	30	37	21	32	120
Female	24	21-30	MA/MS	College/University (Clinical)	College/University	32	38	20	42	132
Female	25	21-30	BA/BS	Clinical (with outreach)	Clinical	32	37	24	41	134
Male	22	21-30	BA/BS	College/University (Clinical)	College/University	34	35	19	39	127
Female	28	21-30	BA/BS	Secondary School	Secondary School	35	38	23	42	138
Female	25	21-30	MA/MS	College/University (Split)	College/University	30	29	19	36	114
Female	35	31-40	MA/MS	College/University (Split)	College/University	28	40	20	40	128
Female	26	21-30	MA/MS	Clinical (without outreach)	Clinical	31	38	24	37	130
Female	27	21-30	MA/MS	Other	Other	34	39	21	38	132
Male	32	31-40	MA/MS	Secondary School	Secondary School	25	27	21	25	98
Male	52	51-60	MA/MS	Secondary School	Secondary School	26	39	21	35	121

Gender	Age	Age Category	Education Level	Work Setting	Work Setting (Consolidated)	Managing others' emotions	Managing own emotions	Utilization of emotions	Perception of emotion	Total EI
Female	30	21-30	MA/MS	Other	Other	35	40	25	47	147
Female	24	21-30	MA/MS	College/University (Faculty)	College/University	35	34	25	32	126
Female	29	21-30	MA/MS	College/University (Split)	College/University	33	37	21	42	133
Female	25	21-30	MA/MS	Secondary School	Secondary School	30	39	21	43	133
Male	51	51-60	BA/BS	Clinical (with outreach)	Clinical	33	38	21	37	129
Female	27	21-30	MA/MS	Other	Other	27	33	22	32	114
Male	29	21-30	MA/MS	College/University (Clinical)	College/University	33	38	29	37	137
Female	24	21-30	MA/MS	College/University (Clinical)	College/University	38	43	28	45	154
Female	38	31-40	MA/MS	College/University (Clinical)	College/University	30	38	21	39	128
Male	49	41-50	BA/BS	Secondary School	Secondary School	38	41	28	42	149
Female	60	51-60	MA/MS	College/University (Faculty)	College/University	36	41	25	46	148
Female	42	41-50	BA/BS	Secondary School	Secondary School	29	35	20	34	118
Male	24	21-30	MA/MS	Secondary School	Secondary School	30	35	20	25	110
Male	27	21-30	MA/MS	Secondary School	Secondary School	30	37	20	43	130
Female	31	31-40	MA/MS	College/University (Clinical)	College/University	23	34	19	34	110
Male	45	41-50	MA/MS	College/University (Split)	College/University	29	37	22	37	125

Gender	Age	Age Category	Education Level	Work Setting	Work Setting (Consolidated)	Managing others' emotions	Managing own emotions	Utilization of emotions	Perception of emotion	Total EI
Male	30	21-30	MA/MS	Clinical (with outreach)	Clinical	28	31	21	37	117
Female	28	21-30	MA/MS	Clinical (without outreach)	Clinical	27	36	28	35	126
Female	37	31-40	BA/BS	Secondary School	Secondary School	34	37	22	40	133
Female	33	31-40	MA/MS	College/University (Clinical)	College/University	30	31	18	34	113
Female	45	41-50	MA/MS	Other	Other	26	30	18	24	98
Male	46	41-50	MA/MS	College/University (Split)	College/University	35	38	25	44	142
Male	25	21-30	MA/MS	Clinical (with outreach)	Clinical	28	36	22	36	122
Female	50	41-50	MA/MS	Secondary School	Secondary School	34	43	26	43	146
Male	44	41-50	MA/MS	Secondary School	Secondary School	23	30	19	32	104
Female	25	21-30	MA/MS	Other	Other	33	33	23	45	134
Female	25	21-30	MA/MS	Secondary School	Secondary School	33	37	24	35	129
Female	25	21-30	BA/BS	College/University (Clinical)	College/University	29	43	23	29	124
Female	31	31-40	MA/MS	Secondary School	Secondary School	37	39	21	42	139
Male	53	51-60	BA/BS	Clinical (with outreach)	Clinical	30	34	19	37	120
Male	39	31-40	MA/MS	Secondary School	Secondary School	34	34	25	36	129
Male	30	21-30	BA/BS	College/University (Clinical)	College/University	32	37	22	46	137
Female	31	31-40	MA/MS	Secondary School	Secondary School	28	32	25	34	119

Gender	Age	Age Category	Education Level	Work Setting	Work Setting (Consolidated)	Managing others' emotions	Managing own emotions	Utilization of emotions	Perception of emotion	Total EI
Male	55	51-60	MA/MS	Secondary School	Secondary School	28	40	22	31	121
Male	37	31-40	MA/MS	College/University (Clinical)	College/University	22	33	22	29	106
Female	51	51-60	MA/MS	Secondary School	Secondary School	33	40	24	45	142
Male	57	51-60	BA/BS	College/University (Clinical)	College/University	20	35	17	36	108
Male	26	21-30	MA/MS	Other	Other	29	36	20	42	127
Male	39	31-40	Doctoral	College/University (Faculty)	College/University	24	38	20	36	118
Female	50	41-50	MA/MS	Clinical (without outreach)	Clinical	32	36	27	39	134
Male	59	51-60	MA/MS	Secondary School	Secondary School	32	35	25	39	131
Male	38	31-40	BA/BS	Other	Other	30	33	23	45	131
Female	42	41-50	MA/MS	College/University (Clinical)	College/University	27	34	23	34	118
Male	40	31-40	MA/MS	Other	Other	33	40	25	34	132
Female	26	21-30	MA/MS	Clinical (with outreach)	Clinical	35	43	27	45	150
Female	30	21-30	MA/MS	College/University (Clinical)	College/University	25	32	20	28	105
Female	45	41-50	BA/BS	Other	Other	32	33	23	40	128
Male	40	31-40	Doctoral	Clinical (with outreach)	Clinical	33	29	24	48	134
Female	24	21-30	MA/MS	Clinical (with outreach)	Clinical	29	30	18	39	116
Female	30	21-30	MA/MS	Secondary School	Secondary School	28	32	20	29	109

Gender	Age	Age Category	Education Level	Work Setting	Work Setting (Consolidated)	Managing others' emotions	Managing own emotions	Utilization of emotions	Perception of emotion	Total EI
Female	30	21-30	MA/MS	Clinical (with outreach)	Clinical	34	41	25	38	138
Female	26	21-30	MA/MS	Clinical (with outreach)	Clinical	28	27	22	34	111
Male	28	21-30	MA/MS	College/University (Clinical)	College/University	34	43	30	49	156
Male	52	51-60	MA/MS	Other	Other	35	44	24	42	145
Male	45	41-50	MA/MS	College/University (Clinical)	College/University	29	32	23	40	124
Male	35	31-40	MA/MS	Other	Other	32	38	25	41	136
Female	32	31-40	MA/MS	College/University (Clinical)	College/University	39	43	24	49	155
Male	27	21-30	MA/MS	College/University (Clinical)	College/University	33	31	23	46	133
Male	39	31-40	MA/MS	College/University	College/University	29	35	25	36	125
Male	22	21-30	BA/BS	Secondary School	Secondary School	27	42	22	46	137
Female	29	21-30	MA/MS	College/University (Clinical)	College/University	37	42	23	46	148
Male	44	41-50	MA/MS	Secondary School	Secondary School	29	34	20	35	118

APPENDIX D: STATISTICAL ANALYSIS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age (years)	73	22	60	35.23	10.425
Managing Others Emotions Subscale	73	20	39	30.75	3.954
Managing Self Emotions Subscale	73	27	44	36.29	4.152
Utilization of Emotion Subscale	73	17	30	22.56	2.809
Perception of Emotions Subscale	73	24	49	38.25	5.885
Self-Report EI Test	73	98	156	127.85	13.437
Valid N (listwise)	73				

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	33	45.2	45.2	45.2
	Female	40	54.8	54.8	100.0
	Total	73	100.0	100.0	

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA/BS	14	19.2	19.2	19.2
	MA/MS	57	78.1	78.1	97.3
	Doctoral	2	2.7	2.7	100.0
	Total	73	100.0	100.0	

Employment Setting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	College/University (Clinical)	18	24.7	24.7	24.7
	College/University (Faculty)	4	5.5	5.5	30.1
	College/University (Split)	5	6.8	6.8	37.0
	Secondary School	21	28.8	28.8	65.8
	Clinical (with outreach)	11	15.1	15.1	80.8
	Clinical (without outreach)	3	4.1	4.1	84.9
	Other	11	15.1	15.1	100.0
	Total	73	100.0	100.0	

Age (Categorical)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-30	35	47.9	47.9	47.9
	31-40	17	23.3	23.3	71.2
	41-50	12	16.4	16.4	87.7
	51-60	9	12.3	12.3	100.0
	Total	73	100.0	100.0	

Employment Setting (consolidated groups)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	College/University	27	37.0	37.0	37.0
	Clinic	14	19.2	19.2	56.2
	Secondary School	21	28.8	28.8	84.9
	Other	11	15.1	15.1	100.0
	Total	73	100.0	100.0	

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Self-Report EI Test	Male	33	126.64	12.864	2.239
	Female	40	128.85	13.974	2.209

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Self-Report EI Test	Equal variances assumed	.463	.498	-.698	71	.487	-2.214	3.171	-8.537	4.110
	Equal variances not assumed			-.704	70.111	.484	-2.214	3.146	-8.488	4.060

Descriptives

Self-Report EI Test

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
21-30	35	129.43	12.777	2.160	125.04	133.82	105	156
31-40	17	125.53	13.739	3.332	118.47	132.59	98	155
41-50	12	125.33	15.704	4.533	115.36	135.31	98	149
51-60	9	129.44	13.408	4.469	119.14	139.75	108	148
Total	73	127.85	13.437	1.573	124.71	130.98	98	156

Test of Homogeneity of Variances

Self-Report EI Test

Levene Statistic	df1	df2	Sig.
.203	3	69	.894

ANOVA

Self-Report EI Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	277.647	3	92.549	.502	.682
Within Groups	12721.696	69	184.372		
Total	12999.342	72			

Post Hoc Tests

Multiple Comparisons

Self-Report EI Test
Bonferroni

(I) Age (Categorical)	(J) Age (Categorical)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
21-30	31-40	3.899	4.014	1.000	-7.01	14.80
	41-50	4.095	4.542	1.000	-8.24	16.43
	51-60	-.016	5.075	1.000	-13.80	13.77
31-40	21-30	-3.899	4.014	1.000	-14.80	7.01
	41-50	.196	5.120	1.000	-13.71	14.10
	51-60	-3.915	5.597	1.000	-19.12	11.29
41-50	21-30	-4.095	4.542	1.000	-16.43	8.24
	31-40	-.196	5.120	1.000	-14.10	13.71
	51-60	-4.111	5.988	1.000	-20.38	12.15
51-60	21-30	.016	5.075	1.000	-13.77	13.80
	31-40	3.915	5.597	1.000	-11.29	19.12
	41-50	4.111	5.988	1.000	-12.15	20.38

Descriptives

Self-Report EI Test

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
College/University	27	128.67	14.954	2.878	122.75	134.58	105	156
Clinic	14	127.21	10.416	2.784	121.20	133.23	111	150
Secondary School	21	126.38	13.808	3.013	120.10	132.67	98	149
Other	11	129.45	13.656	4.117	120.28	138.63	98	147
Total	73	127.85	13.437	1.573	124.71	130.98	98	156

Test of Homogeneity of Variances

Self-Report EI Test

Levene Statistic	df1	df2	Sig.
.737	3	69	.534

ANOVA

Self-Report EI Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	97.306	3	32.435	.173	.914
Within Groups	12902.037	69	186.986		
Total	12999.342	72			

Multiple Comparisons

Self-Report EI Test
Bonferroni

(I) Employment Setting (fewer groups)	(J) Employment Setting (fewer groups)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
College/University	Clinic	1.452	4.504	1.000	-10.78	13.69
	Secondary School	2.286	3.979	1.000	-8.52	13.09
	Other	-.788	4.891	1.000	-14.07	12.50
Clinic	College/University	-1.452	4.504	1.000	-13.69	10.78
	Secondary School	.833	4.718	1.000	-11.98	13.65
	Other	-2.240	5.510	1.000	-17.21	12.73
Secondary School	College/University	-2.286	3.979	1.000	-13.09	8.52
	Clinic	-.833	4.718	1.000	-13.65	11.98
	Other	-3.074	5.089	1.000	-16.90	10.75
Other	College/University	.788	4.891	1.000	-12.50	14.07
	Clinic	2.240	5.510	1.000	-12.73	17.21
	Secondary School	3.074	5.089	1.000	-10.75	16.90

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Self-Report EI Test is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.485	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Self-Report EI Test	73	127.85	13.437	98	156
Employment Setting (fewer groups)	73	2.96	2.104	1	7

Kruskal-Wallis Test

Ranks

	Employment Setti…	N	Mean Rank
Self-Report EI Test	College/University	27	36.83
	Clinic	14	35.93
	Secondary School	21	35.81
	Other	11	41.05
	Total	73	

Test Statistics[a,b]

	Self-Report EI Test
Chi-square	.504
df	3
Asymp. Sig.	.918

a. Kruskal Wallis Test

b. Grouping Variable: Employment Setting (fewer groups)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Self-Report EI Test	73	127.85	13.437	98	156
Age (Categorical)	73	1.93	1.071	1	4

Kruskal-Wallis Test

Ranks

	Age (Categorical)	N	Mean Rank
Self-Report EI Test	21-30	35	39.41
	31-40	17	33.91
	41-50	12	33.00
	51-60	9	38.78
	Total	73	

Test Statistics[a,b]

	Self-Report EI Test
Chi-square	1.304
df	3
Asymp. Sig.	.728

a. Kruskal Wallis Test

b. Grouping Variable: Age (Categorical)